40 Rak

POPULAR Computing WEEKLY

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Vol 4 No 14

Police swoop on hackers—two arrested

POLICE have arrested two men on charges related to the 'hacking' of British Telecom's Prestel network late last year.

The charges made under section 1 of the Forgery and Counterfeiting Act 1981 allege that, Stephen Gold, 29, of Sheffield between November 22 and November 25 last year forged a computer disc recording information on Prestel's Keats and Dickens computers, and that on December 28, he forged a computer disc for recording information from Prestel's Keats computer.

Also, twenty one year old technical author Robert Schifreen of Edgware in Middlesex has been charged that between November 2 1984 and February 17 1985, he forged an electronic device for recording information on Prestel's Gateway test computer and that on December 8, he forged an electronic device on the Vampire facility of the Prestel Kipling computer.

The two were due to appear in Bow magistrates court on April 3rd.

Stephen Gold is the author of Micronet's Micromouse column, which appears daily on the service. However, reports that one of the men is also Hugo Cornwall, pseudonymous author of Century Publications' *The Hackers Handbook*, are almost certainly unfounded.

The arrests come at a time when public interest in hacking had been revived due to controversy surrounding publication of *The Hackers Handbook*.

"We sent a copy of *The Hackers Handbook* to Scotland Yard's fraud squad when it first came out simply out of interest so they could see just what and wasn't in it,"

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SKI STAR 2000 is the first title from Richard Shepherd to depart from the adventure format.

It is a skiing simulation, presenting a skiers-eye view to the player. A feature of the game is an option to design your own ski course, driven by a sophisticated icon-driven menu/plan program. A joystick is used to place obstacles from a graphic menu on a plan-view of the course.

Written by Peter Cooke whose previous credits include *Urban Upstart*, *Ski Star 2000* will be available from mid-April at £7.95 on the Spectrum.

Software for Amstrad's 664

AMSTRAD is building up a range of disc software through its software arm Amsoft, ready for the launch of its new disc-based 664 micro in two weeks time.

Sixteen of the 464's best-selling titles have already been converted to the 664's 3 inch disc format, among them *Roland on the Run*, *Harrier Attack*, *Punchy* and *Hunchback*.

Amsoft will also be offering customers an 'up-grade' service whereby tape versions of programs can be part-ex-

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INSIDE ⟩ FIRST PUBLISHING PROFILE . . . . AMSTRAD STAR GAME ⟩



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View

The arrest of Robert Schifreen and Stephen Gold for supposedly 'hacking' Prestel last November poses the interesting problem of what to do with them.

British Telecom – which found the whole affair and surrounding publicity highly embarrassing – has apparently been investigating for some months. Finally, two individuals have been charged with 'forging computer discs'.

What does that mean? It seems yet another case of the law failing to take account of rapid changes in new technology.

We've been through it all before with the, by now, hugely boring (unless you've been ripped off) question of whether computer software is copyright.

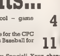
When the hackers' case gets its first hearing this week, and when it eventually comes to court, how will the judges, police, lawyers, barristers and even the media cope? Not very well, I'm afraid.

If it is often difficult for someone in the business to comprehend the issues involved, how is a computer *naif* to manage?

One thing is clear, things can't continue as they have done, continually trying to legally redefine each new technology problem in terms of an old technology one. What is needed now is a comprehensive overhaul of the legal system to take account of the issues raised by electronic information, storage, retrieval and communication. More patches won't do.

All BT will achieve with its present action will be the creation of two new micro 'heroes'.

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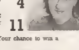
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How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

Computer Trade Association Magazine of the Year

CBM admits price problems with C16

COMMODORE has admitted that High Street pricing on the C16 computer may force it to withdraw the machine from the market.

"Commodore cannot support the C16 at the prices it is being sold for in the shops," said a Commodore spokesman

Most of the larger retailers have been selling the C16 at around £79 for some time, although W H Smith's price is £69.99

"Commodore was in extended discussions with the retailers for sometime, actively discouraging them from making price cuts, but the High Street is currently extremely nervous about the home computer industry," the spokesman continued

"While one option could be to drop the machine, there has certainly been no concrete policy taken on dropping either the C16 or the Plus/4, or cutting the price of the 64 "

Two arrests as police swoop on hackers

◄ continued from page 1

said a spokeswoman for Century

British Telecom is thought to have been investigating attempts to break into the Prestel database very strenuously ever since the now notorious 'hack' into Prince Philip's Prestel mailbox (see *Popular Computing Weekly*, November 8, 1984)

Ultimate to convert Knight Lore

ULTIMATE will shortly be releasing two new versions of the highly popular *Knight Lore*, for the BBC B and Amstrad CPC464

Both implementations will contain all the features and top quality animation of the Spectrum version

Knight Lore for the BBC and Amstrad will cost £9 95

Amstrad's disc software

◄ continued from page 1

changed for disc versions of the product

● Tasman also offers an 'up-grade' to disc service for owners of *Tasword 464*, *Tascopy 464* and *Tasprint 464* The last two cost £8 90 on cassette, £12 90 on disc Tasword 464 costs £18 95 and £22 95, respectively

Medic's QL peripherals delayed

MEDIC Data Systems plans to begin shipping its long awaited QL disc drives and memory expansion boards in the three weeks time

The company first began accepting orders for its disc system over seven weeks ago at the last February ZX Microfair

The delay has been due to an oversight in the printed circuit board design

"Originally we were going to launch two separate boards, but then we developed a double-sided board," said a Medic spokesman

'However, the edge connectors were designed so that the boards would only fit in upside-down

"As we have had to get the connectors redone, we are now thinking of making it a multi-layer connector so that things like an IEEE interface can be incorporated The price for the boards will remain the same "

Entrepo launchesC64 'data drive'

ENTREPO INC, in conjunction with BSR International has now officially launched its new tape-loop C64 storage device, the Quick Data Drive, (see *Popular Computing Weekly, February 14*)

Although based on the same continuous tape loop concept as the Sinclair Microdrive, Entrepo is not keen on making comparisions "I don't want to knock the Sinclair product," said Ian Turner, vice president, "it's just ours is better "

At under £100 the device offers full built-in file management and will load 64K in 30 seconds compared to 23 minutes for the C2N (without a fastloader) and 2 minutes for 1541 Commodore disc drive.

Bundled with its own operating system, blank wafer cartridge and game (probably Epyx's *Renaissance*), the Quick Data Drive will retail at £99 95 and be available in the shops – including W H Smiths – from early May

Details from Dean Electronics Glendale Park, Fernbank Road, Ascot, Berkshire (0344-885661)

Fourth Protocol game takes shape

HUTCHINSON Computer Publications has announced details of its game based on Frederick Forsyth's best-seller *The Fourth Protocol*

The game should be launched at the end of May, and takes the form of an icon-driven adventure in three parts A code word learnt in the first part enables the player to load the second part, and a second code word is needed to load the third section

The first section has the player as Forsyth's hero John Preston, in his office trying to uncover evidence concerning a KGB plot to explode a nuclear bomb in Britain In the second, you travel around London collection more evidence The third section contains an arcade sequence, as the player, accompanied by a team of SAS troops, must blast through KGB men guarding the atomic bomb The bomb must then be detonated to complete the game

The game has been written and programmed by the Electronic Pencil Company, a team made up mostly of ex-Creative Sparks programmers

The Fourth Protocol – The Game will be released for the Spectrum, and Commodore 64 at £12 95, and also on disc for the C64 at £15 95

Stonechip launches Vixen

STONECHIP Electronics has announced a 16K Ram pack for the C16

The Vixen 16 plugs into the rear expansion port of the C16, giving the user an extra 16K of programming space

The Vixen 16 costs £34 95 Details from Stonechip, Unit 9, Brook Trading Estate, Deadbrook Lane Aldershot, Hants (0252 333362)

Dragon 200 to be sold in Britain

THE DRAGON 200 – the new computer from the Dragon's Spanish owners Eurohard – was scheduled to make its UK debut at the 6809 Show held last weekend.

The machine is basically a Dragon 64 in a new casing. The only apparent external changers the addition of an on/off indicator light. The keyboard is identical to the old 64, without the promised rearrangement of the cursor controls.

Also in the pipeline form Eurohard is a new low-cost 2.8 inch floppy disc drive system. Unformatted capacity is 144K, 72 per side, giving formatted capacity of 102.4K (51.2 per side).

The floppy disc will also be compatible, according to Eurohard, with other micros.

No price information is available on the Dragon 200 or the Quick Disc at the time of going to press, but Ted Oprychal of Compusense suggests that he will be selling it for around the same price as the Dragon 64 in the UK, hopefully within the next six months.

New brew from Palace

CAULDRON is the second game form Palace Software, following on from *The Evil Dead* last year.

Cauldron is an arcade adventure in which you control a broomstick riding witch over 200 screens. It will be released for the Spectrum and Commodore 64 in mid-April for £7.99.

IBM man moves to Commodore

COMMODORE has announced the identity of its new general manager to replace Howard Stanworth, who left the company last month.

The new general manager is 38-year-old Nick Sessey, who moves to Commodore from IBM.

Sessey joined IBM UK as a salesman in 1972. In 1983 he was made Product Manager for IBM's UK dealer channel and retail marketing division.

He will take up his appointment with Commodore UK on April 9th.

Croucher and Penfold split

MEL Croucher, one half of the duo that headed Automata, has now effectively left the company.

Mel Croucher – a non-executive role only

While Mel is remaining as Automata's company secretary, his partner Christian Penfold has taken over the day-to-day running.

"I felt it was time for a change," said Mel. "A few other options have come up for me recently. However, Christian will be keeping the philosophy of Automata intact."

Christian said, "Automata is obviously a smaller outfit without Mel, but I hope that we will be bringing out a second Tas Pack of new games in the near future.

"Automata certainly won't be going bankrupt – we never had any money in the first place."

Wrong message

Oh dear! John Scriven (*Ziggurat*, March 21 issue) really has got the wrong message about bulletin board systems.

His criticism seems to be based on a few bad experiences None of the systems I call regularly ever forget my password or have pages to wade through before I can get to the messaging section. Try again, Mr Scriven. Give up now and you'll miss the bus as well as the whole point of bulletin boards.

Boards are a whole new medium – an uncensored, low-cost, public forum where any individual can talk to the world on an equal basis. There are no journalists vs readers, no editors vs advertisers, no politicians vs people, no 'experts' vs punters. Just free people with the chance for speech to a vast audience for the first time ever

And if the medium is this good, the message will be brilliant Boards will provide help, advice and contact with others (great for those of us with disabilities or no jobs) You get real political opinion and real reviews as well as hot news

Sure, it's early days so far, but take a look at the first newspapers and you'll see how things will improve Most callers are still there for the novelty value but soon they will be the pioneers in one of the most important developments in personal computing

In contrast, expensive and bureaucratic old Prestel is the last thing we need 1200/75 baud communication is almost a one-way system – they get to say what they like and you get a huge phone bill trying to answer back. If you don't believe that Prestel is 'controlled' just look at the way Timeframe's pages were removed from the system when the company alleged there was a mole in Prestel's hallowed offices

The only thing Mr Scriven gets right is that boards are dogged by being single-user I don't think it will be long before we have multi-line or PSS PAD systems and then the fun will start

Those of use who put our money where our modem is can rest assured that our time will come If you're still reading paper magazines or dredging through Prestel, take David Bowman's advice – be warned that something big is about to happen.

Max Phillips
Manningtree
Essex

Also on Cabb, BT Gold 84 MTR020 and, yes, Prestel MBX 206391081.

Enterprise club

A small bunch of Enterprise owners wish to start up an independent users group for the machine, as we feel it deserves more support than it is currently receiving

I would be grateful to hear from any other users who are in a position to offer assistance, or, simply want to join us as a member If interested please send an SAE for full details of the club

Mark Lissak
organiser
40 Mansfield Road
London NW3

No sympathy

I read with great interest of the plight of OEL in last week's magazine but, after I've related the following story, you'll understand why I feel no sympathy

I ordered my QCOM modem around Christmas time and in January '85 received a letter quoting a delivery date of 15/2/85 Needless to say this date elapsed with no sign of QCOM and 'phone calls gave the answer that "they're all ready awaiting one chip from TI".

Being a very early QL owner has taught me the virtue of patience if nothing else Eventually I received an Access statement telling me that OEL had debited my Access account on February 1 (No receipt was ever sent) I have written to them informing them that this act was illegal but have received no reply Then everything clicked into place when I read last week's *Popular* and found that I, and no doubt lots more people have been funding OEL's cash-flow crisis.

I have contacted Access and I think I'm covered for such an eventuality but there maybe people out there whose cheques have been cashed who will probably never see the money again.

Please publish the address of the receiver whose name you quoted last week so that he may be contacted by all concerned.

John Lawlor
35 Stonefield Drive
Inverurie
Aberdeenshire
Scotland

The receiver appointed at OEL is Leslie Ross at Thornton Baker in Liverpool on 051 227 4211.

My God! You've breached the fourth protocol!

Into perspective

Let's get this 'learning a new processor' argument into perspective once and for all.

Surely, it depends on your personal abilities and experience with different processors (if any), and the 'time taken' is only important to those who make their living from these devices

If you notice, the last two people to write in on this subject have been members of commercial software companies – probably working with computers five, maybe seven days a week. So, for them, two hours or two days may be a reality (although I suspect it would still take several weeks for them to become fully familiar). For the most of us, though, what does it matter how long it takes? After all, I thought home computing was a hobby.

On the subject of 'Atari ST versus QL' Surely, the Atari spec alone makes you think twice about buying a QL now, let's wait for the Atari to come out before we criticize or compare Who knows, they might be doing a 'Sinclair' on us – see you in 1987

Geoff Sim
96 Harbourne Ave
Paignton
Devon

Universal language

Your columnist in *Ziggurat* March 14, asserts that Esperanto does not work

May I ask him on whose authority he can pronounce this verdict? On the contrary, many people successfully write, talk, discuss and correspond both at home and overseas in Esperanto

Esperantoists welcome criticism, but not condemnation.

A H Gardner
member Esperanto Centre
88 Crescent Road
Wood Green
London N22

Surely, Frank Marshall, in his article comparing MSX and Esperanto, was not so much saying that it doesn't *work* – ie, that the *mechanism* for communication was unmanageable – but more that a universal language is only useful if everyone can speak it.

Similarly, unless the majority of micros sold are MSX – which is at present far from being the case – then MSX is not a 'standard', no matter what any company may suggest to the contrary.

QL baud rate

On the QL I have discovered that if you have your printer set at any baud rate except 9600 you will not be able to do a screen dump from Easel *unless* you have first set the baud rate by using the Baud command and then using *lrun mdv1 boot* instead of using the reset and autorun option.

Thank you for supporting the QL Keep it up

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The way we see it, technology has quite a race on its hands.

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And if you're wondering quite how we've managed that, kindly take a closer look at all the outputs on our remarkable new machine.

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Reviews

Starting point

Program *Gremlins* **Micros** Spectrum and Commodore 64 **Price** £9.95 **Supplier** Adventure International UK, 85 New Summer Street, Birmingham.

Although Adventure International UK are well known for converting the Scott Adams' adventure for UK micros, *Gremlins* is the first home-produced program the Birmingham-based software house has published.

Written by Brian Howarth, author of the Mysterious Adventure series and with graphics by Teoman Irmak, who has been responsible for the British packaging and screen graphics of the Scott Adams' conversions, *Gremlins* is a witty adventure that looks good and plays well, but might not provide enough meat for the seasoned adventure addict.

The parser is very strong – it can decode the standard two-word commands, or take remarkably full sentences. In addition, you can string commands together, using commas – you need this facility to kill the very first Gremlin you are confronted with.

The game begins in a bedroom, and the first problem is to avoid the lethal darts thrown by the Gremlin in the corner.

The rest of the house is fairly easy, and by the time you step outside your front door you will have killed four Gremlins – one squashed in a food processor – and found a friend.

From now on it gets tougher. The adventure is small – about 38 locations – but the problems included should provide quite a lot of enjoyment for the youngish age group Adventure International UK are aiming for.

Apparently the idea is that the kids who couldn't get in to see the movie *can* play the game, which is all very well – but remembering when I was that age, a 15 certificate wouldn't have stopped us!

There is no hint facility, but if you *have* seen the film you won't need one. The means of achieving your objective become fairly obvious, although that doesn't mean the game is easy. You will still have to work out the mechanics.

As an introductory adventure, *Gremlins* is excellent – the combination of witty graphics and a fairly high level parser make it a perfect starting point.

For the experienced adventurers, it will be too easy – but even so, it should provide quite a few hours of entertainment.

Martin Croft

Bad guys

Program *Battle for Midway* **Micro** CPC464 **Price** £ **Supplier** PSS, 452 Stoney Stanton Rd, Coventry CV6 5DG.

First of all can I say that I strongly disapprove of games that give no choice for keyboard input, forcing the purchase of a joystick. Amstrad-compatible tapes are expensive enough as it is without making people invest in hardware that they possibly do not want. *Battle for Midway* does give a 'joystick only' warning on the box, but it is small and easily overlooked whereas I feel it should be in huge screaming red letters. However, leaving that aside, what's the game like?

Before the arrival of games like Imagine's *Stonkers* and Beyond's *Blitzkrieg*, wargames were programmed by enthusiasts with little understanding of the way to squeeze the best out of computer graphics. Cluttered screens, naff UDG's, pathetic bleeps were the order of the day. Fortunately, Midway falls firmly into the second generation of well-programmed games, despite being the brainchild of someone who has been 'designing wargames for 25 years', so you get the best of both worlds. The result is a package complex enough to satisfy the most hardened traditionalist, yet slick enough to keep the fontrest of newcomers more familiar with arcade games.

The setting is a re-enaction of the crucial battle between the Americans and the Japanese during World War Two. You, of course, play the part of the good guy USA (there is also an MSX version of the game, but I don't suppose PSS will be exporting this to Japan) and to lighten the proceedings attacks on the enemy, or vice versa, are shown in arcade style action. Specifically 'for arcade players who cannot resist shooting anything on screen', you are allowed to join in as an Anti-Aircraft gun. Increasing difficulty levels are available which make the Japanese meaner and reduce your chances of finding out what they are up to. Well worth a look.

Tony Kendle

Designer

Program *QL Paintbox* **Price** £9.50 or £4.50 + microdrive tape **Micro** QL **Supplier** J+D Software, 3 Alfred Road, Lowton, Warrington.

The most interesting thing about this product is its cost. If you send one of your own tapes it will only cost £4.50 plus £2 for the tape, making a total of only £6.50. Well worth the investment of a 17p stamp.

Paintbox is a graphics design program, which allows you to produce pictures and then save them as a Basic program which can be loaded back at a later date and run. To do this the program keeps a note of how you built up your picture, and then produces a program out of the graphic commands supplied by SuperBasic. If you want to you can save the notes made by the program for future work or save a copy of the screen as a hi-res picture.

This system allows you to produce pictures for games and adventures with some success, but due to the limited commands available from Basic you do not have such things as a true fill. Even with such limitations I've found the program usable and well written, and if you are unable to follow the program there's a 18-page manual to help you along.

Roger Thomas

Exhilarating

Program *Death Star Interceptor* **Micro** Spectrum 48K **Price** £7.95 **Supplier** System 3 Software, South Bank House, Black Prince Road, London SE11

In the beginning was the *Space Invader*, a nasty little brute who just asked to be zapped. And the *Space Invader* begat a host of other nasty little brutes and we happily zapped 'em. But there also came the *Pam-Man*, the *Donkey Kong* and soon, true to Darwin, the simple zap 'em game was declared primitive, obsolete – extinct!

However in the heart of the most enlightened and sophisticated gamer lurks a dark desire. Doomdark's forces in their majestic landscape are an awesome challenge but what if you could just go ZAP! *Death Star Interceptor* provides just the adrenalin rush we all need from time to time.

Not that it really resembles its primitive predecessors. Following the *Star Wars* march is a brief but tricky launch sequence complete with synthesised speech. Then the swerving and blasting of enemy craft which really do scream out of the blackness of space, following different attack patterns. Survive long enough for the Death Star to reach you and a trench sequence follows.

Yes, the shoot 'em up had evolved and how! On its lowest level the game is fast, at the highest it's crazy and the aliens bomb you. With its superior sound and fine perspective 3D there's one word for *Death Star Interceptor* – exhilarating! **John Minson**

Beginners

Program *Mini Office* **Price** £5.95 **Micro** CPC 464 **Supplier** Database Software, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY

At such a bargain price for 464 software you can't really go wrong, especially when you consider that you get four programs for the price of one. However I can't help wondering what it could have been like if, at twice the price, it had been made twice as good because the four utilities – word processor, database, spreadsheet and graph drawer – are restrictively simple in their present form yet ooze potential and show some excellent touches.

I found the word processor the weakest, being little more than a simple text editor. It allows insertion and deletion but nothing sophisticated like justification, block movement, etc. However it has some positive, if unusual features, most notably a count of typing speed and the ability to work with large letters on screen, useful for the poor sighted, which can also be printed on some dot matrix printers in large form as well. I suppose this is for leaflets etc, but really the program is more suited for letters than anything requiring control over page layout.

The database is extremely good, allowing quite complex, and reasonably fast searches for different field combinations, strings, part strings and so on in the data such as 'find all people called Smith of less than 30' and this justifies the price in itself.

The spreadsheet is also super for the money and many people will find that it contains everything they need for home use, although the formulae linking each row and column are pretty simple in their scope.

The graph drawing program uses data obtained from the spreadsheet files, is fast, graphically attractive and produces hard copy on a range of printers but again is limited by a lack of flexibility in layout and control of scaling, etc. An ideal package for club secretaries I should imagine, or beginners who want a taste of what all these utilities can do – but not for a real business.

Tony Hendle

Efficient

Program *QL Assembler* **Price** £39.95 **Micro** QL **Supplier** Sinclair Research, Stanhope Road, Camberley, Surrey

This is the 'official' QL assembler, written by GST and marketed by Sinclair. It comes along with a blank cartridge, for making a back-up on, and a minuscule manual. The box is the same dimensions as the four-packs of cartridges, so the manual is the same size, in a tiny ring binder. It uses syntax diagrams for showing the formats of commands, making the simplest thing seem complicated, and this combined with the small size makes it rather tricky to understand.

I have been using a pre-release version for months now, so I put the final product in my QL, pressed reset and waited for it to load. I waited for many minutes, before it gave me the infamous 'bad medium' error. I could not even get a directory, so I tried it in drive 2, and it actually loaded. I immediately

Soaring

Program *Glider Pilot* **Micro** Commodore 64 **Price** £7.95 **Supplier** CRL Group Plc, CRL House, 9 King's Yard, Carpenters Road, London E15 2HP

This program simulates a cross-country flight in a modern, high performance, competition glider.

The objective is to complete a triangular course, approximately 180km in length, in the shortest possible time. Before the simulation starts, a selection of different weather conditions can be chosen, or you can set your own parameters. The simulated speed also has to be selected (on speed 1, real time, it will probably take about two hours to complete the course).

The controls for the glider are very simple. Unless you are already familiar with the sport of gliding, you must not know that one of the most useful techniques is thermal soaring. A thermal is a column of warm rising air, usually marked by a cumulus cloud. With a bit of skill, cross-country travel can be achieved by flying to the next visible thermal and circling in it to achieve climb.

Various simple instructions are shown on the cockpit panel – altimeter, air speed, etc. A selection of maps can be accessed to help with navigation. The view from the cockpit is the same as most other flight simulations, showing artificial horizon clouds and so on.

I quite like flight simulators, but I found *Glider Pilot* a bit boring. While there's nothing really wrong with the game, it just seemed a bit slow – no enemy planes to shoot or anything like that.

Tom Hassey

backed it up, and have used the copy ever since in either drive. It would seem that the duplication process used is far from reliable, as this is the only cartridge ever not to load from my QL.

The editor is the usual Metacomco one though they get no credit for it, and as I have described it before I shall simply say it's very good. The assembler reads its source code from cartridge or disc directly, so is not as fast as a memory-based assembler would be. However, that said, it is quick, and can handle very large source files.

The assembler is very standard, much more so than some, and can assume PC mode addressing automatically, while also accepting the more usual form. It works out the I- and A-forms of instructions automatically, though only takes any notice of the first 8 characters of labels, which can be limiting. It does not have advanced features like conditional assembly or macros though, apparently disregarded in favour of explanatory error messages. On a 128K machine, the editor can handle a maximum of around 30K per file, so for bigger programs the source has to be chopped into sections, then assembled together using an 'include' function. The assembler is very efficient in the way it uses memory, and I would estimate that object code files of over 25K could be produced without running out of memory. This is very much more than others but as yet the assembler cannot assemble modules separately then link them to create larger files, as Metacomco's can.

This is a good, standard assembler, while lacking more advanced features, it can assemble large programs, and is relatively quick even on Microdrives.

Andrew Pennell

Friendly

Program *Masterfile 464* **Micro** CPC464 **Price** £25.00 **Supplier** Campbell Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex

Every so often a program comes along that is a real landmark in terms of quality and price. One such is *Masterfile 464* converted from the Spectrum version for Amsoft by Campbell Software Design. This is without question the best tape based database I have ever seen.

Its features are almost too numerous to document, but points of real note are that it allows up to 34K of storage in each file and there are no fixed length records which means that there is no wasted space. There is 34K available for each individual file, like *Tasword 464*. Although the program can be transferred to disc without alteration, because everything happens in Ram files must still be that length even on disc. But this does mean that functions such as sort and search are faster than on more disc orientated software.

To help with memory management there is a constant record on screen of the percentage of the file space used and the number of bytes free. Presentation is superb, although entirely in 80 column mode which is best on a green monitor, and there are many user friendly prompts supported by a well written manual which makes learning the program very easy.

However, the most revolutionary feature is that the database allows 'relational' data with 'parent' and 'child' records. To use the manual's example, if you were storing data on your record collection a 'parent' would be an artist and this information would only be entered once. This record can then point towards several 'children' – the various album titles. Such a two tier system is by far the most efficient method of storing data.

Tony Kendle

A turkey

Program *Mushrooms from Mars* **Micro** Spectrum **Price** £1.99 **Supplier** Scorpio Gamesworld Ltd., 307-313 Corn Exchange Building, Manchester 4

Nothing Can Stop Them! See Weird Green Horrors Drop From Above! There Are The *Mushrooms From Mars*!"!

Golden Turkeys are films so bad they're laughably enjoyable. Films which boast titles as oozingly unsubtle as *Plan Nine From Outer Space*, films which hysterically promise more than they can ever deliver on their miniscule budgets, films whose advertising screamed 'This film will sterilise you with fear!'

Mushrooms from Mars isn't a cheapie film but a budget game which dares court comparison with the above trash classics. Behind the sensational title lurks just another jumping/climbing game, Rule One – turkeys disguise their lack of originality. Compared with the *Alien 8s* it looks cheap and simple.

But *MfM* isn't quite that bad or incompetent. In fact, for a cheap and simple game it won't exactly 'sterilise' you with excitement but it could give a few hours pleasure.

John Minson

Giant video

Program *World Series Baseball* **Micro** Commodore 64 **Price** £7.95 **Supplier** Imagine, Ocean House, 8 Central Street, Manchester 2

Remember Rounders? You know the game you played in primary school where you could have boys and girls on the same team.

Well, in America, they give players lots of padding and funny gloves, stage it in front of 20,000 people and call it baseball.

Now all ex-patriots and interested parties can indulge in this curious American pastime on their micros, courtesy of the born again Imagine.

It has to be said the graphics, depicting the playing field, stadium and giant video screen are very impressive indeed together with the sound – a fine imitation of the thwack of leather on willow ... ah, no, that's another game, isn't it.

The program itself plays well when you get the hang of it, with one player (versus computer) or the more entertaining two players options. I say when you get the hang of it because comprehensive though the instructions are, if you don't know the actual rules of baseball, you're in trouble. This is a silly omission for a game presumably aimed at the UK market.

In charge of the batting or fielding side, all action is easily controlled by joystick, with the nice effect of the actual batting being shown on the giant video screen.

For baseball fans it's all here, nine innings of pitching, hitting, running, and stealing, all beautifully animated.

Me, I'll wait for the American Football version.

John Cook

An answer

Program *Interactive Basic Programming* **Price** £7.95 **Micro** Spectrum 48K **Supplier** Eigen Software, 45 Bancroft Road, Widnes, Cheshire WA8 0LR.

```
In order to produce zaps
and the like, you will need to
experiment with small durations,
    100 BEEP .02,23
    110 BEEP .02,27
    120 BEEP .02,30
    130 BEEP .02,32
    140 BEEP .02,33
    150 BEEP .02,33.5
    160 BEEP .02,33.6
    170 BEEP .02,33.8
    180 GOTO 100
  (You will have to press CAPS
SHIFT and BREAK to stop the
program (BREAK).)
```

Despite claims that Basic is the easiest computer language and its near universal use as an introduction to programming, few will be able to remember every detail of syntax and punctuation, and many will stumble over details, however good their text book.

How much easier it would be if the computer could guide the novice, combining text with a structured course of practical exercises. It's such a good idea that I'm surprised nobody has thought of it until now. Eigen's *Interactive Basic* is the answer to many prayers. After each keyword is introduced a problem is set, two hints are available, and if all else fails a possible solution can be *Listed* and *Run*.

With 12 programs, running across two sides of the tape, most of the keywords are covered, and the projects increase in difficulty, culminating in a game. It's all extremely friendly, but its strength is also its weakness. With all the text on tape you can't refer back as easily as with a book. There's also some messy layout and the accompanying documentation would be better if it detailed how to *Run* the program more fully. Still, the price is excellent and as an adjunct to the Sinclair manual it is invaluable.

John Minson

Rock world

Program *The Biz* **Price** £6.95 **Micro** Spectrum 48k **Supplies** Virgin Games, 2-4 Vernon Yard, Portobellow Road, London W11 2DX

You won't have heard of 'The Byron Four', but they released eight singles, mostly on their own Acidrop label, and even reached the bottom of the filthy forty with their psychedelic rock. You won't have heard of them because they only existed in this game.

Chris Sievey, best known for being *'In Love With The Girl On The Virgin Manchester Megastore Checkout Desk'*, produced one of the first singles with programs on the B-side. Now he shares his experience of the rock world with those of us who've only previously ever played cardboard guitars in front of our bedroom mirrors.

This results in a satirical strategy game rather than a full blooded simulation. Balance your visuals with musical skills, remember you have to rehearse as well.

Chris's musical talents are demonstrated by the eight singles included, unfortunately they're somewhat ahead of his Basic programming.

But *The Biz* wins through because of its wit, its author's expertise and its subject. After all, aiming for *Top of the Pops* is much more fun than a simulation of Falklands sheep farming.

John Minson

Astronomy

Program *Rotating Starsphere* **Micro** Spectrum 48K **Price** £6.95 **Supplier** Eclipse Software, 79 Ardrossan Gdns, Worcester Park, Surrey

The home computer has found an easy place in the amateur astronomer's affections if the number of star-seeking programs available is to be believed. This one looks decidedly spartan compared with its more lavishly presented neighbours, however it is certainly competent.

The display centres on the planispheres in which the whole sky, for a specified time and place, is displayed. 388 stars to magnitude 3.7 in 47 constellations are stored on the database and machine code ensures speedy redrawing of the map when you choose to change your angle or time of viewing.

One pleasing option is to draw in the patterns of the constellations, however as few of these actually resemble their names you then need to refer to a separate cardboard map included in the package.

How well this will satisfy the keen astronomer's need is open to question, but it should prove useful for the more casual observer.

John Minson

Lunatic

Program *Emerald Isle* **Price** £6.95 **Micro** BBC B **Supplies** Level 9 Computing, 229 Hugherden Road, High Wycombe, Bucks HP13 5PG.

The latest offering from the madhouse of Level 9 Computing is a change from the company's now-customary serialised adventures. *Emerald Isle* is the first of several, slightly easier, stand-alone games, for a wide variety of computers and all illustrated, even the BBC version. The plot contains familiar elements from previous games, you, the pilot stranded by a plane crash on the *Emerald Isle* deep in the Bermuda Triangle, must make a successful bid for the throne or else die in any one of several gruesome ways.

As well as being a little easier than its predecessors, I feel that *Emerald Isle* is also slightly less amusing (none of the usual dazzling play on words), although it still requires the adventurers to keep all their wits about them. The first problem is simply preventing yourself from becoming high tea for the vultures as you swing helplessly from the parachute which is caught in a mangrove tree, but the solution is reasonably straightforward. From that point you can get quite a long way into the game, including two interesting railway journeys, before you need risk your life again.

```
What next? WEAR ROBE
What next? S
A guard sees your robes and welcomes
you.
You are in the palace quad. Exits are
north to an alleyway, east to hanging
gardens and south to the east hall.
What next? E
You are in hanging gardens. The exit
is west to the palace quad. You can
see 'U'.
What next? _
```

The aim is to collect enough treasures to merit the crown. Don't be too surprised if you can't seem to read any of the nice helpful signs which pop up all over the place, remember this is a foreign country. What you need is a good phrase book.

It's an enjoyable high-quality adventure but, unfair though it is, Pete Austin and the rest of the Level 9'ers have led us to expect nothing short of lunatic brilliance from their team. C'mon, Pete, how about a bit more punishment for adventurers in the next one?

Barbara Conway

Competition

Win a copy of Chuckie Egg 2!

This week *Popular Computing Weekly* is giving away 24 copies of the spectacular sequel to **Chuckie Egg** **Chuckie Egg 2** It's a giant 120 screens of egg-orientated mayhem

The original **Chuckie Egg** was one of the best platform and ladders games ever fiendishly designed to push your judgment and responses to the limit **Chuckie Egg 2** puts the hero of that program Hen House Harry in a chocolate egg factory where he must assemble the parts of some chocolate Easter eggs

Finding and assembling all the parts you need will test your arcade credibility as never before – it'll also test your wits, and you can get a copy free

The Prizes

Popular Computing Weekly is giving away 12 copies of the Spectrum version of **Chuckie Egg 2** and 12 copies of the Amstrad version. Make sure you specify which one you require on your competition entry form.

The Competition

All you have to do is answer the three questions below:

1) What was the name of the famous Hollywood actor who took part in an egg eating contest in *Cool Hand Luke*?
2) What animal used to be printed on eggs?
3) Which egg fell off a wall?

How to enter

If you think you know the answers to the questions above fill in the coupon below, complete with your name and address and which machine you own. The address to send your completed coupon is *Popular Computing Weekly* 12-13 Little Newport Street London WC2H 7PP. Closing date for the competition is April 26th.

Chuckie Egg Competition

Name SIMON BRAT

Address 48 ROCK ROAD, CAMBRIDGE CB1 4HF

Answers
1)
2) EASTER SHAM
3) Humphy Dumpty

Micro ZX SPECTRUM

First off the mark

***Christina Erskine** talks to Sara Galbraith of First Publishing*

For sometime now people have been waiting in the wings for the games craze to end and for micro users en masse to demand more useful things to do with their machines. Last year, Triptych Software decided the time was right with its Brainpower range.

This year, Sara Galbraith reckoned, will see a mass market being created for serious software – a demand which she hopes her company, First Publishing will fulfill.

At 26, Sara is too old to be the archtypal computer whizz-kid ("It all began when I built the ZX80 from kit form in my bedroom") and too young to be the seasoned entrepreneur ("The corporation looked at the latest figures for micros and we reckon it's a high growth, hi-tech industry").

In fact, she started her high growth, hi-tech career as a restaurant cook at 16 years old. "It was good fun, but after a while I realised that I wasn't going to get very far if I carried on drinking so much. What with boozy lunches and people sending drinks into the kitchen all evening while I was seeing to the meals, and then nightcaps to relax afterwards, I was looking aged at 17," said Sara frankly. Actually she doesn't look the least like the sort of person to be weaving temperamentally over a charcoal grill with a bottle of sherry in one hand and a chateaubriand in the other.

She looks the very image of the successful business woman – an image carefully cultivated, since as she admits if you don't look successful, no-one will believe you are.

First Publishing eventually came about as a result of frustration. Sara had spent two years at Peachtree and Precision Software, following her stint as a chef and a further period as a secretary. She felt that both the software companies were lacking in flexibility.

"Peachtree was full of very able, experienced men – with all the flexibility of an iron bar. I was working on the educational software division, and felt that not enough money was being put in to that side of it.

"I moved on to Precision, where the product was good, but the marketing non-existent. It was easy to see what they should be doing, marketing-wise, but again difficult to get people to act on it.

"There was one incident particularly; I had suggested the name *First Base* for one product – I thought it would be especially good for the American market – which wasn't taken up. When I started First Publishing I used the title myself, only to discover Precision had just brought out a product called *First Base*."

So, in order to be able to implement her own ideas – of which she had and has plenty – Sara decided to set up on her own. The German company Data Becker put up the capital for her to start. "After writing begging letters for capital, which didn't work, I met Becker himself in Germany and discovered he agreed with my ideas.

"With the packages we release, I want to establish a reputation for quality – become the Marks and Spencer of software, if you like. That's why I feel the branding and packaging is very important, because I want it to be instantly recognisable."

The packaging is distinctive – blue and yellow the theme through the whole range. The range itself consists of word processor, databases, spreadsheets, assembler/monitor, Pascal and books, which complement and integrate with the software.

Why I asked, are these any better than similar products brought out from other companies, apart from the fact that they're cheaper, ranging from £19.99 for the Assembler/Monitor to £35.99 to *Firstword 64* and *FirstBASE 64*.

"*FirstBASE*, the data manager, is just as good as *Superbase* (Precision's flagship product), but at a third of the price. First*WORD* is a very easy-to-use word processor – about the only one you can load and use right away.

"*PowerPLAN 64*, which is £44.99, is extremely powerful, and the Pascal has been very highly praised."

So far, all First Publishing's releases have originated from Data Becker and been translated at First Publishing from the German. Is this relationship set to continue or will First be using software from other sources?



"Both," said Sara firmly. "Firstly, I'm taking Data Becker's product because I want to. There's nothing in the contract that says I have to use it – the companies are entirely separate. However, the product is so good, that I definitely do want it.

"Then I want to branch out and use freelancers over here too."

Had she anyone particular in mind?

"Well, I'd love to get Simon Tranmer to do some writing for First – unfortunately, he's not freelance, he works full-time for Precision."

And what about writing for other machines? The Commodore has a vast user-base, but it would seem a good idea to take advantage of the newer machines looming up.

"We have plans to convert and re-write to the Amstrad and the Atari ST – in fact, the first Amstrad product should be out very soon."

Sara obviously has faith in Jack Tramiel's ability to deliver exactly what he says he'll deliver when he says he'll deliver it. "Well, I'm not sure about the timing, but yes, I have faith in the machine. We have someone at Data Becker working very closely on the Atari ST in Germany, so we know a little about its progress."

The decision to go with the Amstrad and Atari is largely tied up with the Data Becker relationship. Three other companies, in France, Holland and the US, also work with Data Becker in the same way as First Publishing.

Atari and Commodore machines are popular in all five countries – Amstrad does well in Germany and the UK.

First Publishing has now been established for six months and has grown to eight staff – how does Sara view her achievements?

"We did have problems at first – I expected our first releases to be out last October, but they didn't appear until December, so we lost three months of prime selling time.

"But sales have been good – surprisingly good. I have two permanent sales staff, who are out on the road selling straight to dealers. I prefer to sell direct, although we do use Micro Dealer UK for some distribution.

"My first objective is to make the company stable – I intend to be around for a long time – then I might start taking risks.

"People may not be using their micros for our applications in any great number just yet, but I want to create a mass market for serious software, even if it's non-existent at the moment.

"Looking back, I can't imagine really why I set up on my own. It certainly isn't easy, and I do wish at times that there was someone else to blame occasionally when I make the wrong decisions."

Sara admitted, however, that at least she can take all the credit as well when things go right.



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Shipwrecked

Not Desert Island Discs. . .but a text-only adventure for the CPC464 by *Steve Lucas*

Two months ago, I set sail to search for the mysterious island of Doctor Klein. Last night, after many hours of storms, the ship struck a rock and sank. Fortunately, I managed to find a piece of driftwood to hold on to and when I woke this morning, I find that I am floating only a few feet from shore. Please help me to find a boat and row to safety by giving me instructions in the form of tow word sentences such as GET ROPE, CLIMB HILL, etc. To move around, you just need to use a single letter N, S, E or W.

Here is a list of some of the words I understand: Go, In, Out, Up, Down, North, South, East, West, Help, Swim, Row, Sail, Paddle, Climb, Eat, Drink, Inventory, Score, Drop, Leave, Put, Get, Take, Grab, Look, Examine, Search, Lift, Unlock, Wear, Read, Launch

Program Notes

S%(x,y)	holds map
B%(x,y)	pointer to location of objects
N&(x)	pointer to words understood
N$(x)	words understood
Q$(x)	description of location
G$(x)	description of objects
S%(x,y)	map
P%	current location
AA-AZ	flags
E%,F%	check for objects
Z$	input sentence
B$,C$,D$	first word input
L$	second word input

```
10 MODE 1:BORDER 7:INK 0,0:INK 1,6:INK 2
,24:INK 3,18
20 LOCATE 14,3:PEN 1:PRINT"Shipwrecked"
30 LOCATE 1,7:PEN 2:PRINT"An adventure g
ame for the Amstrad CPC464";
40 LOCATE 5,12:PEN 3:PRINT"(C)   Steve W
. Lucas.   November 1984"
50 PEN 1:p%=1
60 DIM s%(21,4),b%(21,1),n$(21),n%(21),q
$(21),g$(21),v$(5)
70 RESTORE:FOR x=1 TO 21:READ q$(x):FOR
y=1 TO 4:READ s%(x,y):NEXT y,x
80 FOR x=1 TO 21:READ g$(x),b%(x,1),n$(x
):n%(x)=x:NEXT
90 CLS:WHILE z%<999
100 IF p%=13 THEN au=au+1:IF au>3 AND aa
=0 THEN x$="The wolf attacks me!":GOSUB
760
110 IF p%=10 THEN ax=ax+1:IF ax>3 AND ay
=0 THEN x$="The monster turns round and
sees me. A  jet of flame springs from it
s mouth":GOSUB 760
120 IF p%=17 AND ak<2 THEN aq=aq+1:IF aq
>3 THEN x$="The farmer comes over and hi
ts me!":GOSUB 760
130 IF p%=3 THEN ap=ap+1:IF ap>7 THEN x$
="The lizard attacks me!":GOSUB 760
140 IF at=1 THEN PRINT"I am wearing some
 wellies!"
150 PEN 2:PRINT"I am:-":PEN 1:PRINT q$(p
%):a$="":IF s%(p%,1)>0 THEN a$="North"
160 IF s%(p%,2)>0 AND LEN(a$)=0 THEN a$=
"South" ELSE IF s%(p%,2)>0 THEN a$=a$+",
South"
170 IF s%(p%,3)>0 AND LEN(a$)=0 THEN a$=
"East" ELSE IF s%(p%,3)>0 THEN a$=a$+",E
ast"
180 IF p%=1 THEN a$="to the shore !"
190 IF s%(p%,4)>0 AND LEN(a$)=0 THEN a$=
"West" ELSE IF s%(p%,4)>0 THEN a$=a$+",W
est"
200 IF p%=14 THEN a$="Up" ELSE IF p%=13
THEN a$=a$+",Down" ELSE IF p%=12 THEN a$
=a$+",In"
210 PEN 2:PRINT:PRINT"I can travel :-":P
EN 1:PRINT a$
220 e=0:FOR t=1 TO 21:pp%=0:IF b%(t,1)=p
% THEN pp%=1
230 IF pp%=1 THEN 250
240 NEXT:GOTO 280
250 IF e=0 THEN PEN 2:PRINT:PRINT"I can
see :-":PEN 1
260 IF p%=14 AND as=0 THEN PRINT"a knock
er on the door."
270 PRINT g$(t):e=1:GOTO 240
280 PRINT:PEN 2:INPUT"What shall I do ";
z$:z$=LOWER$(z$):b$=LEFT$(z$,2):c$=LEFT$
(z$,3):d$=LEFT$(z$,4)
290 CLS:PRINT CHR$(7):IF c$="loo" OR c$=
"exa" THEN PRINT"I can see nothing speci
al!" ELSE IF c$="sea" THEN PRINT"I haven
't found anything at all!"
300 IF c$="eat" THEN PRINT"I'm not hungr
y!" ELSE IF c$="dri" THEN PRINT"I m not
thirsty!"
310 IF c$="sco" THEN PRINT"What do you t
hink this is...a game ?" ELSE IF c$="get
" OR c$="tak" OR c$="gra" THEN GOSUB 430
 ELSE IF c$="up" OR c$="cli" OR d$="go u
" THEN GOSUB 890
320 IF c$="inv" THEN GOSUB 710 ELSE IF c
$="dro" OR c$="lea" OR c$="put" THEN GOS
UB 600 ELSE IF c$="kno" THEN GOSUB 810 E
LSE IF c$="thr" THEN GOSUB 950
330 IF c$="pad" OR c$="swi" THEN GOSUB 7
40 ELSE IF c$="lif" THEN GOSUB 800 ELSE
IF c$="hel" THEN PRINT"I m sorry. I m as
 confused as you are!"
340 IF (b$="n" OR d$="go n") AND s%(p%,1
)>0 THEN p%=s%(p%,1):GOTO 90
350 IF (b$="s" OR d$="go s") AND s%(p%,2
)>0 THEN p%=s%(p%,2):GOTO 90
360 IF (b$="e" OR d$="go e") AND s%(p%,3
)>0 THEN p%=s%(p%,3):GOTO 90
370 IF (b$="w" OR d$="go w") AND s%(p%,4
)>0 THEN p%=s%(p%,4):GOTO 90
380 IF b$="n" OR b$="s" OR b$="e" OR b$=
"w" THEN PRINT"I can t go that way!"
390 IF c$="opl" THEN GOSUB 910 ELSE IF c
$="in" OR d$="go i" THEN GOSUB 930 ELSE
IF c$="yel" THEN GOSUB 1010
400 IF c$="rea" AND p%=11 THEN PRINT"It
reads ... Beware of fish!" ELSE IF c$="r
ea" THEN PRINT"I can t see anything to r
ead!"
410 IF c$="dow" OR d$="go d" THEN GOSUB
940 ELSE IF c$="usa" OR c$="chi"  THEN G
OSUB 950 ELSE IF c$="ram" OR c$="sai" OR
 c$="lau" THEN GOSUB 990
420 WEND
430 GOSUB 550:IF I%<>1 THEN RETURN
440 e%=0:FOR h=1 TO 21:IF b%(h,1)=p% AND
 h=r THEN e%=1
450 NEXT:IF e%=0 THEN PRINT"I don't see
it here!":RETURN
460 IF r=19 THEN PRINT"I can t lift it!"
:RETURN ELSE IF r=1 THEN as=1 ELSE IF r=
2 THEN x$="I get a hernia with the effor
t!":GOSUB 760
470 IF r=3 THEN ac=1 ELSE IF r=4 THEN x$
="It sticks its venom deep into my leg!"
:GOSUB 760
480 IF r=5 THEN x$="I cut myself and ble
ed to death!":GOSUB 760 ELSE IF r=6 THEN
 ad=1 ELSE IF r=7 THEN ae=1 ELSE IF r=8
THEN PRINT"Don't be absurd!":RETURN
490 IF r=9 THEN x$="It bites my head off
!":GOSUB 760 ELSE IF r=10 THEN af=1 ELSE
 IF r=11 THEN ag=1 ELSE IF r=12 THEN x$=
"It goes for my throat!":GOSUB 760 ELSE
IF r=13 THEN ah=1
500 IF r=14 THEN PRINT"Don t be silly!":
RETURN ELSE IF r=15 THEN ai=1 ELSE IF r=
16 THEN aj=1 ELSE IF r=17 THEN PRINT"Don
't be absurd!":RETURN
510 IF r=18 THEN ak=1 ELSE IF r=19 THEN
PRINT"It s stuck!":RETURN ELSE IF r=20 T
HEN al=1 ELSE IF r=21 THEN am=1
520 e%=0: FOR d=1 TO 4:IF v$(d)="" THEN
v$(d)=g$(n%(r)):e%=1:d=5
530 NEXT:IF e%=0 THEN PEN 3:PRINT"I m so
rry my hands are full!":RETURN
540 b%(n%(r),1)=0:RETURN
550 l$="":FOR h=1 TO LEN(z$)
560 IF MID$(z$,h,1)=" " THEN l$=RIGHT$(z
$,(LEN(z$)-h)):h=90
570 NEXT:r=0:I%=0:IF LEN(l$)<2 THEN RETU
RN
580 FOR h=1 TO 21:IF LEFT$(n$(h),LEN(l$)
)=l$ THEN I%=1:r=h
590 NEXT:RETURN
600 GOSUB 550:IF I%<1 THEN PRINT"I don't
 see a ";l$:RETURN
610 e%=0:FOR d=1 TO 4:IF v$(d)=g$(n%(r))
 THEN v$(d)="":e%=1
620 NEXT:IF e%<1 THEN PRINT"I'm not carr
ying it!":RETURN
630 b%(n%(r),1)=p%
640 IF p%=13 AND r=1 THEN au=9:PRINT"The
 wolf grabs it!":g$(1)="":q$(12)="a few
bones"
650 IF p%=10 AND r=15 THEN ay=9:PRINT"Th
e monster turns into Doctor Klein and he
 thanks me for my kind gift!":q$(9)="Doc
tor Klein":g$(15)=""
660 IF r=1 THEN as=0 ELSE IF r=3 THEN ac
=0 ELSE IF r=6 THEN ad=0 ELSE IF r=7 THE
N ae=0 ELSE IF r=10 THEN af=0 ELSE IF r=
11 THEN ag=0 ELSE IF r=13 THEN ah=0 ELSE
 IF r=15 THEN ai=0
670 IF r=16 THEN aj=0 ELSE IF r=18 THEN
ak=0 ELSE IF r=20 THEN al=0 ELSE IF r=21
 THEN am=0
680 IF r=6 AND p%=11 THEN p%=12:PRINT"I
drop the plank and walk across it. No so
oner than I reach the other side than th
e fish attack it and it falls into the ri
ver."
690 IF r=18 AND p%=17 AND ak<2 THEN ak=6
:aq=0:PRINT"The farmer thanks me and run
s off!":q$(10)="":g$(14)="some dry hairs
"
700 RETURN
710 PEN 3:PRINT"I am carrying :-":PEN 1:
f%=0:FOR h=1 TO 4:IF v$(h)<>"" THEN PRIN
T v$(h):f%=1
720 NEXT:IF f%=0 THEN PRINT"Nothing at a
ll!"
730 PRINT:RETURN
740 IF p%=1 THEN p%=2:PRINT"O.K.":RETURN
 ELSE IF p%=11 OR p%=12 THEN x$="The fis
h eat straight through my flesh!":GOSUB
760
750 PRINT"I can t do that here dummy!":R
ETURN
760 CLS:PEN 1:LOCATE 1,5:PRINT x$
770 PEN 2:LOCATE 1,7:PRINT"I am dead. Wo
uld you like another game ?"
780 a$=INKEY$:a$=LOWER$(a$): IF a$="y" O
R a$="Y" THEN RUN
790 IF a$="n" OR a$="N" THEN LOCATE 1,20
:PRINT"Goodbye. Thank you for playing!":
END ELSE 780
800 IF p%=2 AND aa=0 THEN PRINT"I lift t
he rock.. I see something!":q$(3)="a lon
g rope":aa=1:RETURN ELSE IF p%=2 THEN PR
INT"I don t think my back would stand th
at  again!":RETURN ELSE PRINT"Not here!"
:RETURN
810 IF p%=9 THEN x$="A giant Ogre answer
s the door, sees me  and decides to eat
```

Star Game

```
en'":GOSUB 760
820 IF p%<>14 THEN PRINT"Not here'":RETU
RN
830 IF an=0 THEN an=1:PRINT"A friendly d
warf answers the door, dragssomething on
t and closes the door behindhim.":g$(11)
="a small rowing boat":RETURN
840 PRINT"The dwarf answers and has a co
nversationwith me.":RETURN
850 GOSUB 550:IF r<>3 THEN PRINT"I can t
 see any point in doing that'":RETURN
860 IF p%<>3 THEN PRINT"There isn t much
 point in doing that here'":RETURN
870 IF ao=0 THEN ao=1:PRINT"The rope cat
ches on the tree and I tie  it firmly'":
z$="drop rope":GOSUB 600:g$(3)="a rope h
anging from the tree'":RETURN
880 PRINT"How can I do that ?":RETURN
890 GOSUB 550:IF r=3 AND p%=3 AND ao=1 T
HEN p%=4:PRINT"I climb up'":RETURN ELSE
IF r=3 THEN PRINT"Not yet'":RETURN
900 IF p%=4 THEN x$="I slip and break my
 neck'":GOSUB 760 ELSE IF p%=14 THEN p%=
13:PRINT"O.K.":RETURN ELSE PRINT"I can t
 do that here'":RETURN
910 IF p%<>7 THEN PRINT"I can t do that
here stupid'":RETURN ELSE IF aj<>1 THEN
PRINT"I don t have the key dummy'":RETUR
N
920 PRINT"O.K.":a%(7,2)=8:aj=2:z$="drop
key":GOSUB 600:g$(17)="":RETURN
930 IF p%=12 THEN p%=15:PRINT"O.K.":RETU
RN ELSE PRINT"Don t be silly'":RETURN
940 IF p%=13 THEN p%=14:PRINT"O.K.":RETU
RN ELSE PRINT"I can t do that here'":RET
URN
950 GOSUB 550:IF r<>7 THEN PRINT"I can t
 use a ";l$:RETURN
960 IF aa<>1 THEN PRINT"I need some word
'":RETURN ELSE z$="drop logs":GOSUB 600:
PRINT"I chisel away and make some oars'"
:g$(21)="a pair of oars":n$(21)="oars":a
s=2:RETURN
970 PRINT"I can t do that just yet'":RET
URN
980 IF p%<>20 THEN PRINT"I can t do that
 here'":RETURN ELSE IF ag<>1 THEN PRINT"
I don t have a boat'":RETURN
990 IF at<1 THEN PRINT"As I walk into th
e water, a giant crab  bites my toe. I t
hink some footwear      would help'":RETU
RN
1000 p%=21:IF as>0 AND aw=1 THEN 1020 EL
SE x$="I didn t have any oars and drift
away   for days until I die'":GOSUB 760
1010 IF al<>1 THEN PRINT"I ve nothing to
 wear'":RETURN ELSE at=1:z$="drop wellin
gton":GOSUB 600:g$(20)="":al=3:RETURN
1020 CLS:PEN 2: LOCATE 1,5:PRINT"Well do
ne. You have managed to sail     away fr
om the island and reach safety.":END
1030 DATA floating on a piece of driftwo
od,0,0,0,0,on a sandy beach. A steep cli
ff rises   high above me to the west,0,3
,0,0,on the beach. There are more pebble
s   here than further north. A gnarled
tree hangs over from the top of the clif
f
1040 DATA 2,0,0,0,at the top of a steep
cliff face. A treehangs over the cliff,0
,5,0,0,on a narrow footpath leading alon
g the  cliff top,4,7,6,0,at the centre o
f a stone circle. There  are shadowy fig
ures in the distance
1050 DATA 0,0,0,5,by a large iron gate.
I can just make   out the outline of a b
uilding in the    courtyard,5,0,0,0,in a
 large courtyard. The gloom laden   atmo
sphere is very menacing,7,0,9,10
1060 DATA at the front door of an enormo
us brick  building,0,0,0,8,in a garden f
ull of exotic plants and  strange unusua
ls,0,11,8,0
1070 DATA on the northern banks of a nar
row river.I can just make out some fish
swimming,10,0,0,0,on the river banks. Th
ere is a wooden  hut to the west,0,17,1
3,0
1080 DATA at the top of a long winding s
taircase  leading down between two high
brick    walls,0,0,0,12,at the bottom o
f some stairs. There is asmall door here
,0,0,0,0
1090 DATA in a wooden hut. There is a la
rge pot offood simmering in a pot on a c
amping gascooker,0,16,12,0,by a large cu
pboard hanging on the wall,15,0,0,0
1100 DATA in a forest. The trees are so
thick I m not sure which direction I m g
oing,12,17,18,17,in a forest. The trees
are so thick I m not sure which directio
n I m going,18,19,17,17,in a forest. The
 trees are so thick I m not sure which d
irection I m go
1110 DATA 18,17,20,19,on a sandy beach.
There is a gloomy     forest to the west
,0,0,0,19,In a small rowing boat,0,0,0,2
1120 DATA a small fish,1,fish,a large ro
ck,2,rock,"",2,rope,a menacing lizard,3,
lizard
1130 DATA a rusty tin,4,tin,a plank of w
ood,5,plank,a chisel,16,chisel,a large d
oor knocker,9,knocker,a menacing two hea
ded monster,18,monster,a cauldron of foo
d,15,cauldron,"",14,boat
1140 DATA a fierce looking wolf,13,wolf,
a ladle,16,ladle,an irate farmer,17,farm
er,a giant egg,6,egg,a large key,4,key,a
 padlock and chain,7,padlock,a sheep dog
,10,sheep dog,a tiny notice,11,notice
1150 DATA a pair of wellingtons,12,welli
ngtons,a pile of logs,19,logs
```



Codify your code

Hot up your code storage on the Spectrum with this program by ***Tony Dexter***

Most programmers are avid collectors of published machine code routines, and quickly accumulate a large number. The usual practice is to key these in from the published listing and then, after testing, to save on cassette for possible future use. Many such routines occupy very little tape space and a single C15 cassette might hold up to 30 code snippets on each side.

Since each set of code occupies such a short length of tape, finding any particular routine can be tricky. It is all too easy to Fast Wind right past the bit of code you want. This is particularly so when you mislay the scrap of paper detailing the cassette's contents or find an unlabelled cassette, or one in the wrong box.

This program creates an expandable Index Program which is positioned at the beginning of each side of a cassette. As you add routines to the cassette you also note the details within the index program.

Then when you later seek a particular item all the required details are there, inseparable from your programs.

Of course such catalogue programs have been published for Basic program storage. This program is unusual in that it can *Auto-Load* machine code. This would seem to present problems in that most machine code *Loading* requires a *Clear* instruction (to lower Ramtop), and a *Clear* instruction also *Clears* the variables and you thus lose your data.

This program gets around the problem by selecting the information it will require for the *Load*, and *Poking* this, in numeric form, to be stored in the printer buffer. It retrieves this information, after the *Clear* instruction, and re-establishes the necessary variables.

After keying in the listing *Run* the program. You will be presented with a blank index, with options to enter program data, load a program, or save the index. Put a new cassette in your recorder, set the tape counter to zero and select the *Save Index* option. This establishes a new entry point in the index program which preserves previously established variables.

After any new piece of code is *saved* on the cassette you should make a note of the tape counter settings at the beginning and end of the Save. Now run back the tape and *Load* the index program. Select the *enter data* option, and answer the prompted questions. Your code will be labelled as being either relocatable or not. If it is not relocatable then you will need to enter the address from which the code was saved. If the code can be used at any suitable location then the address is unimportant, although the length of code is.

The program in this case stores the number of bytes occupied. After keying in the relevant information you should select the save option once more, thus preserving your updated index.

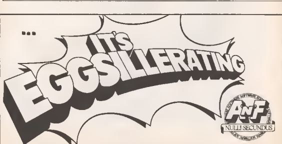
This procedure is by no means complex and quickly becomes a habit. It does add a couple of minutes to the time it takes to save a particular routine, but it is time well spent. The index is designed to hold up to 30 routines.

When you wish to *Load* a code routine you simply *Load* the index, select your routine from the list presented, and follow the instructions to *Auto-Load* the selected piece of code. If the code is not relocatable, then it will be loaded back to the correct address. In all other cases you will be informed of the length of code in bytes, and asked to key in your chosen location. The program will automatically suitably lower Ramtop and carry out the *Load*.

As far as possible the program is protected against mistakes in user-entry with extensive checking. If a program break does occur then *Enter* <*GOTO help*> when you will be returned to the Menu, with all variables intact.

```
10 DIM a(30): DIM c$(30,10): DIM b(30): DIM r(30): DIM s(30): DIM f(30)
20 LET count=0
30 LET help=360: GO TO help
40 CLS : LET count=count+1
50 INPUT AT 21,0;AT 10,0;"ENTER THE NAME CODE WAS SAVED BY";i$: IF i$="" THEN
 GO TO 50
60 IF LEN i$>10 THEN  GO TO 50
70 LET c$(count)=i$
80 PRINT AT 0,0;i$
90 INPUT AT 21,0;AT 10,0;"IS THE CODE RELOCATABLE? Y/N ";i$: IF i$="Y" OR i$="
y" THEN  LET r(count)=1
100 PRINT AT 0,0;c$(count); INVERSE 1;"";("R" AND r(count)); INVERSE 0
110 IF r(count)=0 THEN  GO TO 170
120 INPUT AT 21,0;AT 10,0;"LENGTH OF CODE? HOW MANY BYTES? ";i$: IF i$="" THEN
 GO TO 120
130 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN  GO TO 120
140 NEXT i
150 LET b(count)=VAL i$
160 PRINT AT 0,0;c$(count);" ";b(count): GO TO 230
170 INPUT AT 21,0;AT 10,0;"ADDRESS FOR START OF CODE ";i$: IF i$="" THEN  GO TO
170
180 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN  GO TO 170
190 NEXT i
200 LET b(count)=VAL i$
210 IF b(count)<23999 AND r(count)=0 THEN  GO TO 170
220 PRINT AT 0,0;c$(count);" ";b(count)
230 INPUT AT 21,0;AT 10,0;"TAPE COUNTER POSITION STARTS AT ";i$: IF i$="" THEN
 GO TO 230
240 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN  GO TO 240
250 NEXT i
260 LET s(count)=VAL i$
270 PRINT AT 0,0;c$(count);" ";b(count);" "; INVERSE 1;"";("R" AND r(count)); I
NVERSE 0;" ";s(count)
280 INPUT AT 21,0;AT 10,0;"TAPE COUNTER POSITION ENDS AT   ";i$: IF i$="" THEN
 GO TO 280
290 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN  GO TO 290
300 NEXT i
310 LET f(count)=VAL i$
320 PRINT AT 0,0;c$(count);" ";b(count);" "; INVERSE 1;"";("R" AND r(count)); I
NVERSE 0;" ";s(count);"to";f(count)
330 INPUT AT 21,0;AT 10,0;"DATA O.K.? ENTER Y or N ";i$: IF i$="N" OR i$="n" TH
EN  LET count=count-1: GO SUB 40
340 RETURN
350 STOP
360 BORDER 6: PAPER 6: INK 9: CLS : PRINT  PAPER 7;"         MACHINE CODE
   "
370 LET start=1
380 PRINT  INK 7; PAPER 2;"No.";TAB 4;"Name";TAB 17;"Bytes";TAB 23;"Counter";TA
B 16;"or Addr        "
390 LET end=start+14: IF end>count THEN  LET end=count
400 IF count>0 THEN  FOR i=start TO end: PRINT i;TAB 4;c$(i);TAB 15; INVERSE 1;
"";("R" AND r(i)); INVERSE 0;TAB 17;b(i);TAB 24;("0" AND s(i)<10)+("0" AND s(i)<
100);(s(i));"to";("0" AND f(i)<10)+("0" AND f(i)<100);f(i)): NEXT i
```

```
410 IF count>0 THEN PRINT INVERSE 1;"R"; INVERSE 0; PAPER 7;" INDICATES RELOC
ATABLE CODE   "
420 IF COUNT<>0 THEN LET S=F(COUNT)+2: PRINT PAPER 4;"  SAVE NEXT CODE FROM
"(TAB 26;("0" AND S<100);("0" AND S<10);S
430 PRINT AT 20,0;" (N)EXT PAGE      (E)NTER DATA  (L)OAD CODE      (S)AVE IN
DEX": PRINT £1;" PRESS A LETTER"
440 POKE 23658,8
450 IF INKEY$<>"" THEN GO TO 450
460 LET i$=INKEY$: IF i$="" THEN GO TO 460
470 POKE 23658,0
480 IF i$="N" THEN LET start=start+(15 AND count)15 AND start<16)-(15 AND star
t=16): CLS : GO TO 380
490 IF i$="E" THEN GO SUB 40: GO TO 360
500 IF i$="S" THEN CLS : PRINT AT 10,0;"REWIND THE TAPE AND PREPARE TO RECORD
": SAVE "INDEX" LINE 360: CLS : PRINT AT 10,9; FLASH 1;"STOP RECORDING": FOR i=1
 TO 20: BEEP .1,20: NEXT i: GO TO 360
510 IF i$<>"L" OR count<1 THEN GO TO 360
520 INPUT "ENTER NUMBER OF CHOSEN CODE ";i$: IF i$="" THEN GO TO 570
530 DEF FN k(x)=INT (x/256): DEF FN l(x)=x-FN k(x)*256: DEF FN i(x)=PEEK x+256*
PEEK (x+1)
540 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN GO TO 520
550 NEXT i
560 LET sel=VAL i$: IF sel>count OR sel<1 THEN GO TO 520
570 LET s$=c$(sel): FOR i=10 TO 1 STEP -1: IF CODE s$(i)=32 THEN LET s$=s$( TO
i-1): NEXT i
580 LET y=23296: FOR i=y TO y+9: POKE i,32: NEXT i: FOR i=y TO (y-1)+LEN s$: PO
KE i,CODE s$(i-(y-1)): NEXT i
590 POKE y+10,FN l(b(sel)): POKE y+11,FN k(b(sel)): POKE y+12,FN l(s(sel)): POK
E y+13,FN k(s(sel))
600 CLS : IF r(sel)=0 THEN GO TO 650
610 PRINT AT 10,0;c$(sel): PRINT "YOUR CODE LENGTH = ";b(sel);" BYTES": PRINT "
  FROM WHERE DO YOU WISH TO          LOAD THIS CODE?": INPUT "ENTER ADDRESS "
;i$: IF i$="" THEN GO TO 610
620 FOR i=1 TO LEN i$: IF CODE i$(i)<48 OR CODE i$(i)>57 THEN GO TO 610
630 LET ad=VAL i$: POKE y+10,FN l(ad): POKE y+11,FN k(ad)
640 IF ad<29999 THEN GO TO 610
650 IF r(sel)=0 THEN LET ad=b(sel)
660 CLEAR ad-1
670 LET y=23296
680 LET ad=FN i(y+10)
690 LET s$="": FOR i=y TO y+9: LET s$=s$+CHR$ (PEEK i): NEXT i
700 FOR i=10 TO 1 STEP -1: IF CODE s$(i)=32 THEN LET s$=s$( TO i-1): NEXT i
710 LET st=FN i(y+12)
730 CLS : PRINT AT 10,0;"   RUN THE TAPE TO            COUNTER SETTING ";st
: PRINT "  AND PLAY THE TAPE"
730 LOAD s$CODE ad
740 CLS : PRINT AT 10,0;s$;" CODE": PRINT "LOADED TO ";ad
750 PRINT "NOW LOAD YOUR BASIC PROGRAM OR ENTER ""NEW"""
760 STOP
```



Name, rank and number

A superfast index creation and search program for the BBC B by Calvin Woodings

Have you ever tried to use one of those expensive commercial database discs to make an index, and found that it takes so long to get used to it you wished you hadn't bothered? Have you nevertheless persisted and found that a search of your index is so slow you could have found the reference quicker without the database? Are you still interested in computerising indexes or catalogues? If so, read on!

Tracer is a compact database program designed for index creation and searching. As a result of its small size it leaves 23000 bytes free for text, and is thus able to transfer to memory 580×40-byte records, generally sufficient, for example, for 24 issues of the average magazine. Because of its fast action it does this in less than four seconds, and it can search such an index for a keyword of up to 12 letters in less than five seconds. It is therefore able to find references to items of interest in significantly less time and with greater accuracy than a visual search through a printed version of the index.

Tracer has a wide range of applications. Its speed and ease of use make it an ideal cataloguing tool for school libraries, resources, even for basic school records, marks, etc. Because of its simple design it has proved to be an ideal introduction to information storage and retrieval for children of primary age upwards being comprehensively error trapped, and very user friendly.

The listings will be provided in four parts. This week the "New Index" program which calls and is called by the Main Program, is presented. Next week and the week after will deal with the main program which will overlay the New Index program and provide the procedures to enable you to Load an index, Search it, Display it, Edit it, Add Records to it, and Save it. The final week will present a machine code printer driver to enable you to list searches to a printer, and will also give you hints to help you get the best out of the programs.

This version of *Tracer* is suitable for use on a BBC B with 40 track drive using the Acorn or Watford single density DFS. It has been checked with Basics 1 and 2, and with OS 1.2. It will run on a cassette system, but the slow program and file transfer rates reduce its value in searching for references.

Program Notes

The New Index program gets an index name, checks it for uniqueness, and enables you to define the format of the records in your index. It does this by asking you to compose the headings under which the index is later displayed. The number of characters and/or spaces used in each field in the heading become the number of characters allowed in each field of the index.

In order to save memory space, the New Index routine has been separated from the main program and is "chained" into use from disc when it is required. It is loaded into the same area as the main program, and when it has finished it chains *Tracer* back into position.

The Listing – apart from some space-saving constructions which might look odd to those who faithfully follow the conventional usage of BBC Basic, the main curiosity of the listing is the appearance of 'g' and 'y' characters inside quotes due to be printed on screen. These simply refer to the teletext codes obtained by using the shifted function keys. Hence, 'g' = *<SHIFT f2>* is green 'y' = *<SHIFT f3>* is yellow

Line 80 – initialises the main variables used and sets up the error trap. *Himem* is the start

```
   10 REM TRACER: A SUPERFAST INDEX CREATION AND SEARCH PROGRAM
   20 REM BY C.R.WOODINGS (C)1985
   30
   40 REM NEW INDEX PROGRAM
   50
   60 REM************************:
   70
   80 MODE7:HIMEM=&5D00:I%=40:P%=&C00:S%=&C50:F$=&CA0:ONERRORGOTO100
   90 PROCnw:GOTO110
  100 ?F$=&0D:?HIMEM=&0D:IF ERR=&C3 CLS:PROCpr(12,"This name is in use. Try Agai
n"):PROCco(20):GOTO80 ELSE IFERR<>17 CLS:PRINTTAB(5,12);:REPORT:PROCco(20)
  110 CHAIN"TRACER"
  120 END
  125 REM The 'y' before <ESC> etc is the yellow teletext code <SHIFT F3>
  128
  130 DEFPROCt($P$) CLS:$P$=CHR$131+CHR$141+$P$:PROCpr(1,$P$):PROCpr(2,$P$):PRIN
TTAB(0,3)CHR$146 STRING$(39,"`"):PRINTTAB(0,22)CHR$145 STRING$(39,"`"):PROCpr(21
,"y<ESC> for MENU"):ENDPROC
  135
  140 DEFPROCnw
  150 PROCt("New Index"):PROCpr(12,"pEnter New Name"):PRINTTAB(16,14);:$F$=FNin(
7,91,97):$P$="SAVE I."+$F$+" "+STR$~HIMEM+" +8":X%=0:Y%=&C:CALL&FFF7:W%=0
  160 $P$="DELETE I."+$F$+" "+STR$~HIMEM+" +8":X%=0:Y%=&C:CALL&FFF7:W%=0
  170 IF LEN($HIMEM)<>39 GOTO210
  180 PROCpr(12,"yCurrent Format is:-"):PRINTTAB(0,14);SPC40:PRINTTAB(0,14);$HIM
EM
  190 PRINTTAB(0,15)"1'''5'''10'''15'''20'''25'''30'''35''39"
  200 IF NOT FNyn(18,"Is this O.K.") ENDPROC
  210 PROCpr(12,"yEnter Record Format with Titles"):PROCpr(16,"yUp to 7 Fields a
re allowed"):PROCpr(28,"yUse </> to end all but last field")
  220 PRINTTAB(0,15)"1'''5'''10'''15'''20'''25'''30'''35''3R"
  230 PRINTTAB(0,14);:$HIMEM=FNin(39,31,128):PRINTTAB(0,15)SPC40:IF LEN($HIMEM)<
39 PROCpr(12,"yRecord Length must be 39 Characters"):PROCco(20):GOTO210
  240 Fld=0:Fldlen=1:ptr=0
  250 REPEAT
  260 IF?(HIMEM+ptr)=47 OR ?(HIMEM+ptr)=13 THEN?(HIMEM+40+Fld)=Fldlen-1:Fldlen=0
,Fld=Fld+1:IF?(HIMEM+ptr)=47 ?(HIMEM+ptr)=128+Fld
  270 ptr=ptr+1:Fldlen=Fldlen+1
  280 UNTILptr>39
  290 N%=39:REPEAT:N%=N%+1:UNTILN%?HIMEM=0 OR N%-40=Fld
  300 IF N%-40<>Fld PROCpr(12,"yZero length field used"):PROCco(20):GOTO210
  310 IF Fld>7 PROCpr(12,"yMore than 7 fields used!"):PROCco(20):GOTO210
  320 ?(HIMEM+47)=Fld
  330 PROCpr(12,$HIMEM):PROCpr(14,STRING$(40," ")):IF FNyn(14,"Is this O.K.") GO
TO210
```

of the index proper, and *P%*, *S%* and *I%* are the starting addresses of general use string buffers set up to avoid using the Basic string storage method, which consumes useful RAM above the program. *I%* is used as a permanent location for the index name. String variables stored in this way are preserved through the chaining operations.

Line 100 – when *Escape* is pressed or when an error is detected, this line clears any index name from *I%* and any index heading from *Himem*. *Error &C3* is the "file locked" error and is used by *Tracer* to prevent you accidentally using the same index name twice and erasing a valuable index. *Tracer* automatically locks indexes every time it saves them. *Procnw* checks to see whether an index name already exists simply by trying to save a blank file of that name, and if the *&C3* error occurs it means that the file does exist. This is much more economical than the routines provided to enable you to read the disc catalogue. Error 17 is *Escape*, and pressing *Escape* calls up *Tracer* without setting up a new index.

Line 130 – calls *Procl* to set up the screen, gets in your index name, and stores it at *I%* and then sets up a command line at *P%* to enable a blank file to be saved using the command line interpreter which resides at *&FFF&* in the operating system. As mentioned above this is simply a device to check that the name you chose was unique.

Line 160 – deletes the blank file created by Line 160 in case you change your mind before using it. *Tracer* will only use the new name if you actually put something in the index and save it from the main program.

Lines 170-230 – valid headings have 38 characters. If such a heading is already present, lines 180 – 200 displays it for your approval. Otherwise Lines 210 – 230 get in a new heading.

Lines 240-280 – sift through your heading counting the number of fields and measuring their length. They put the data obtained in the seven bytes following the heading itself (ie, from *Himem + 40*) and replace CHR$47 (i.e "/" – the file dividers) with a teletext colour code (i.e 138+fld).

Lines 290-310 – check that you have no zero length fields, and that you don't have more than 7 fields in total.

Line 320 – loads the number of fields used into the byte at *Himem + 47*

Line 330 – gives you a chance to change the heading now stored in final form at *Himem*. If its OK the index length variable *W%m* is zeroed at Line 340, and the end of *Procnw* precipitates the chaining of Tracer via Line 90

Lines 360-470 – are the utility procedures controlling keyboard inputs (*Fnyn, Procco, Fnin*). They use locations *P%* and *S%* to store strings. *Fnin* uses parameters *V%* (to control the number of characters accepted), and *loASC* and *hiASC* (to define the lowest and highest *ASCII* code keypresses which will be accepted)

Line 480 – *Procpr* ensures that text is centred when printed.

Save the listing under the name *"NEW"* preferably on an empty disc which can be reserved for the rest of the programs.

If you would like to have the whole series up and running on a 40 track disc, send £12 to the author at 12 Copsewood Ave, Nuneaton, Warwickshire CV11 4TQ

```
349 W%=0
350 ENDPROC
354
355 REM The 'g' in Line 370 is the green teletext code <SHIFT f2>
356
360 DEFFNyn(U%,$P%):LOCALans:*FX15,1
370 PROCpr(U%,"g"+$P%+" (Y/N) ? Y"):VDU8:REPEAT:ans=(GET AND &DF):UNTILans=&59
ORans=&4E ORans=&D:PRINTTAB(0,U%)SPC79:=(CHR$ans="N")
375
380 DEFPROCco(U%):*FX15,0
390 PROCpr(U%,"y<RETURN> to continue "):REPEATUNTILGET=13:PRINTTAB(0,U%)SPC39:
ENDPROC
395
400 DEFFNin(V%,loASC,hiASC):VDU23,1,1;0;0;0;:*FX202,32
410 LOCAL K%,Z%:K%=0:?S%=&D
420 PRINTSTRING$(V%,".");" ";STRING$(V%+1,CHR$8);:*FX15,1
430 REPEAT:Z%=GET
440 IFZ%=127ANDK%>0 K%=K%-1:$S%=LEFT$($S%,K%):VDUZ%,46,8:GOTO470
450 IFZ%>loASC AND K%<V%AND Z%<hiASC K%=K%+1:$S%=$S%+CHR$Z%:VDUZ%:GOTO470
460 IFNOT(Z%=13AND K%>0)VDU7
470 UNTILZ%=13AND K%>0:=$S%
475
480 DEFPROCpr(U%,$P%):PRINTTAB(0,U%);SPC39:PRINTTAB((I%-LEN$P%)/2,U%)$P%;:ENDP
ROC
```

Merging mania

The final instalment of a mail-merge program for the QL written by ***Don McAllister***

The normal datafile produced by *Archive* is not correctly formatted to use in this application, so it is necessary to construct a separate file specifically containing the information we require. This has the advantage of being able to extract, for example, names and addresses from a main file of customers, which would normally contain other information, information not required to produce a mailshot. You may also wish only to select a small number of customers using specific criteria for your mailshot. This separate file of names and addresses can be constructed by using a procedure entered in the *Edit* mode of *Archive*.

Let us presume a simple file has been created using the *Create* command (see figure 1). In this masterfile is contained the name, address, product code (signifying the item sold), date of purchase and first name of each individual customer.

Assuming that you have opened the masterfile using the *Open* command and it is the current file in use, to construct a file containing every address in the masterfile, we would use the procedure in figure 2. This is entered in the *Edit* mode of *Archive*, and is initiated by typing *mail*.

If we wanted to send details of, for example, new software available, only to customers who had purchased an item with product code 3 (say a QL computer) then we would use the procedure in figure 3. This procedure extracts all those customers and produces a file containing just their names and addresses, and is initiated by typing *choose*.

Finally once both the Quill document and the address file have been prepared all that is necessary is to load the mail-merge program and carefully follow the on-screen prompts.

Copies of the program on microdrive are available from the author at 1 Brookside Close, Prescot, Merseyside costing £6.95

```
1290   CSIZE 2,0:AT 19,0 :INPUT "      Ready for print run
(y/n)? ";answer$
1300    IF answer$ = "Y" OR answer$ = "y" THEN
1310     channel=4
1320     dbase = hold_variable
1330     construct
1340    ELSE
1350     file
1360   END IF
1370 END DEFine
1380 :
1390 DEFine PROCedure address
1400   screen_display
1410   INK 7:PAPER 2
1420   CSIZE 3,1:AT 2,7:PRINT "ADDRESS LIST "
1430   CSIZE 1,0:AT 11,13:INPUT "Print address list ? (y/n)
";ans$
1440    IF ans$ ="Y"OR ans$="y"THEN
1450       AT 13,11:INPUT"Space between each address :
";space
1460       CSIZE 0,0:PAPER 4:INK 0:AT 17,20:  PRINT " To
initiate print run - press f1"
1470    ELSE
1480       help
1490       STOP
1500    END IF
1510   output=CODE(INKEY$(-1))
1520    IF output = 232 THEN
1530       channel = 4
1540    ELSE
```

```
1550      help
1560      STOP
1570    END IF
1580   OPEN_IN #3,'mdv'&n$&'_'&file$
1590   OPEN #4,ser1
1600   CSIZE 2,0: AT 17,0:PRINT " PRINTING INITIATED"
1610   tlf_list
1620    REPeat loop
1630      IF EOF(#3) THEN EXIT loop
1640      FOR lines = 1 TO gap
1650        tlf_list
1660        prt_line
1670      END FOR lines
1680     tlf_list
1690      FOR separator = 1 TO space
1700        PRINT #4
1710      END FOR separator
1720    END REPeat loop
1730   CLOSE #4
1740   CLOSE #3
1750   INK 7:AT 17,0:PRINT " PRINTING FINISHED "
1760   PAUSE 250:help
1770 END DEFine
1780 :
1790 DEFine PROCedure tlf_list: REMark ** Take line from
archive file **
1800   INPUT #3,rec$
1810 END DEFine
1820 :
1830 DEFine PROCedure tlf_doc: REMark ** Take line from
quill document **
1840   INPUT #5,rec$
1850 END DEFine
1860 :
1870 DEFine PROCedure prt_line: REMark ** Print line **
1880   PRINT #(channel),rec$
1890 END DEFine
1900 :
1910 DEFine PROCedure report
1920   position = 10
1930   screen_display
1940   PAPER 2:INK 7
1950   CSIZE 3,0:AT 2,9:PRINT"PRINTING"
1960   CSIZE 1,0:AT 4,9:PRINT"QUILL SOURCE DOCUMENT :
";name$
1970   AT 6,10:PRINT "USING DATA HELD BY"
1980   AT 8,10:PRINT "ARCHIVE DATA FILE    : ";file$
1990   INK 0:PAPER 4: CSIZE 0,0:AT 17,10:PRINT "CURRENTLY
PRINTING DOCUMENT No : ";document
2000   AT 10,23:PRINT ;(dbase-document);" DOCUMENTS LEFT IN
RUN"
2010 END DEFine
2020 :
2030 DEFine PROCedure report_update
2040   CSIZE 0,0
2050   INK 7:PAPER 2
2060   AT position,24:PRINT rec$
2070   LET position=position+1
2080 END DEFine
2090 :
2100 DEFine PROCedure help
2110   CSIZE 3,0
2120   PAPER 2:INK 7:CLS
2130   AT 2,8: PRINT"INFORMATION"
2140   CSIZE 0,0
2150   LINE 10,75 TO 150,75 TO 150,30 TO 10,30 TO 10,75
2160   AT 6,0:PRINT "TO RE-RUN PRINTING WITH CURRENT DATA -
TYPE 'CONSTRUCT'"
2170   AT 8,0:PRINT "TO RE-RUN ADDRESS LIST PRINTING -
TYPE 'ADDRESS'"
2180   AT 10,0:PRINT "TO RESTART PROGRAM WITH NEW DATA -
TYPE 'START'"
2190   AT 12,0:PRINT "TO RETURN TO SUPERBASIC -
TYPE 'NEW'"
2200 END DEFine
2210 :
2220 DEFine PROCedure layout
2230   FOR record = 1 TO a
2240     tlf_doc
2250     prt_line
2260   END FOR record
2270 END DEFine
```


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Sound electronics

The first part of a synthesiser utility program for the CBM64
by ***Gareth Thomas***

This program acts as a utility for designing sound effects on the 64. Because all values used and displayed by the program are those that need to be *Poked*, conversion of sounds to your own programs is easy.

For a Basic program it provides a good coverage of the sound capabilities of the 64 including; synchronisation, ring modulation, filtering, resonance, ADSR, waveform selection, multiple voices and filter sweeping. All information is displayed on one screen with selection being made on the bottom line via four different one line menus.

A window at the bottom left displays prompts while the next window along is used for input.

When the program is run the bottom line should look like this: F1-Define, F3-Effects, F5-Voice, F7-Sound. All the main sound features, ie, ADSR, waveform and filtering, are available by pressing *F1*, so if pressed the bottom line should now change to look like thus F1-Envelope, F3-Wave, F5-Filter, F7-Exit.

Pressing *F7* will take you back to the main menu. To change the envelope press *F1*. The word envelope should then change to reverse video and the prompt should flash. To change the envelope use one of the prefixes, ie, ADSR, and a value between 0-15. So *"A15" (return)* will set the Attack to 15 and "S4" *(return)* will set the Sustain to 4. Once you have finished type "E" *(return)* to exit back to the menu.

To change the waveform press *F3*. There are all four waveforms to select from, Triangle, Sawtooth Pulse, Noise. To select type the prefix (ie, T for triangle) etc. If you select Pulse you must then enter the pulse width, this takes the form of high and low values with H between 0-15 and L between 0-255. To change these type the prefix followed by the value, eg "P" (return), "H15" (return), "L255" (return), "E" (return) exit back to menu. This will set up pulse waveform with maximum width.

Finally to set up the filter press F5. First enter the filter type, High pass, Low pass, or Band pass. Again use the prefix to select.

Next you are prompted for the cutoff point, taking the form of High(H) and Low(L) values. H is in the range 0-255 and L is the range 0-7. Next week we go on to the filters.

```
0 REM     ************************
1 REM     *      "SYNTH64" A     *
2 REM     * SYNTHESISER UTILITY *
3 REM     *     FOR THE C-64     *
4 REM     *  BY G.THOMAS 1984    *
5 REM     ************************
6
7 REM CRD=CURSOR DOWN  CRP=CURSOR UP
8 REM CRL=CURSOR LEFT  CRR=CURSOR RIGHT
9
10 GOSUB 8900
40 REM [3*CRP] [CRR] [RVS ON] [RVS OFF] [2*CRD]
50 PRINT"TT* *OPTION?*    **"
60 REM [CRP] [CRP]
70 PRINT"]* F1-DEFINE F3-EFFECTS F5-VOICE F7-SOUND ']"
80 GETG$ IFG$=""THEN40
90 IFASC(G$)<133ORASC(G$)>136THEN80
100 ONASC(G$)-132GOSUB1000,1500,1800,7500
110 GOTO70
500
900 REM [CRP]
1000 PRINT"] F1-ENVELOPE F3-WAVE F5-FILTER F7-EXIT "
1020 GETG$ IFG$=""THEN1020
1030 IFASC(G$)<133ORASC(G$)>140THEN1020
1035 REM [F7]
1040 IFG$='*'THENRETURN
1050 ONASC(G$)-132GOSUB1900,2900,4950
1055 REM [3*CRP] [CRR] [RVS ON] [RVS OFF] [2*CRD]
1200 PRINT"TT* *OPTION?*    **" GOTO1000
1300
1400 REM [CRP] [CRP]
1500 PRINT"]F1-SYNC F3-RESONANCE F5-RING MOD F7-EXIT]"
1520 GETG$ IFG$=""THEN1520
1530 IFASC(G$)<133ORASC(G$)>136THEN1520
1535 REM [F7]
1540 IFG$='*'THENRETURN
1550 ONASC(G$)-132GOSUB4000,3690,4500
1570 GOTO1500
1600
1700 REM [CRP]
1800 PRINT"]",CL$
1805 REM [CRP]
1810 PRINT"]   VOICE(1,2 OR 3)?"
1820 GETG$
1830 IFG$<>"1"ANDG$<>"2"ANDG$<>"3"THEN1820
1840 V=ASC(G$)-48
1850 IFV=2THENME=13
1860 IFV=3THENME=26
1870 IFV=1THENME=0
1871 REM [CRP]
```

```
1875 PRINT"]"CL#"CL=1618+((V-1)*80)
1876 REM [CRP]
1880 PRINT"]VOICE"V"ON OR OFF(PRESS N/F)?"
1881 GETG$ IFG$<>"N"ANDG$<>"F"THEN1881
1883 M$=" "+CHR$(143)+CHR$(142)
1884 IFG$="N"THENVO(V)=1 GOSUB2700
POKE1621+((V-1)*80),32
1885 IFG$="F"THENVO(V)=0 M$=" OFF" CF=1 GOSUB2700
1886 RETURN
1887
1890 REM DEFINE ENVELOPES
1895 REM [3*CRP] [CRR] [RVS ON] [RVS OFF]
1900 PRINT"TT]] VOICE"V"]"
1901 REM [CRP] [CRR] [RVS ON]
1950 PRINT"]]F1-ENVELOPE"
2000 LN=3 GOSUB 2500
2006 IFM$="E"THEN2120
2010 S$=MID$(M$,1,1) IFS$<>"A"ANDS$<>"D"ANDS$<>
"S"ANDS$<>"R"THEN2000
2015 IFLEN(M$)=1THEN2000
2020 S=ASC(MID$(M$,2,1)) IFS<48ORS>57THEN2000
2030 IFLEN(M$)>2THENS=ASC(MID$(M$,3,
1)) IFS<48ORS>57THEN2000
2050 V$=MID$(M$,2,LEN(M$)-1) VL=VAL(V$)
2060 IFVL>15THEN2000
2070 IFLEN(M$)=2THENM$=M$+" "
2080 IFS$="A"THENA(V)=VL CL=1067+ME GOSUB2700
2090 IFS$="D"THEND(V)=VL CL=1073+ME GOSUB2700
2100 IFS$="S"THENS(V)=VL CL=1147+ME GOSUB2700
2110 IFS$="R"THENR(V)=VL CL=1153+ME GOSUB2700
2115 GOTO2000
2116
2117 REM POKE ADSR NYBBLES
2126 POKEAD+5+((V-1)*7),(A(V)*16)+D(V)
2130 POKEAD+6+((V-1)*7),(S(V)*16)+R(V)
2140 RETURN
2150
2400 REM INPUT SUBROUTINE
2500 FORL=1879TO1885 POKEL,32 NEXT X=0 M$=""
2501 GETG$ IF G$=""THENGOSUB2600 GOTO2501
2502 IFG$=CHR$(13)THENRETURN
2503 IFG$=CHR$(20)ANDX<>0THENGOSUB2530 GOTO2501
2505 IFX=LNTHEN2501
2506 MN=0
2509 IFG$>="A"ANDG$<="Z"THENMN=64
2511 POKE1879+X,ASC(G$)-MN M$=M$+G$ X=X+1
2520 GOTO2501
2530 X=X-1
2540 POKE1879+X,32 M$=MID$(M$,1,LEN(M$)-1)
2550 RETURN
2560
2570 REM FLASH PROMPT
2600 F=0 POKE1878,32 GOSUB2650
2610 IFFTHENPOKE1878,63 RETURN
2620 POKE1878,63 GOSUB2650
2630 IFFTHENRETURN
2640 GOTO2600
2650 FORN=1TO35 IFPEEK(203)<>64THENF=1 RETURN
2660 NEXT RETURN
2670
2680 REM S/R PLACE DATA ON SCREEN
2700 IFCFTHENCD=64 CF=0 GOTO2710
2701 CD=0
2710 FORL=1TOLEN(M$)-1:POKECL+L,ASC(MID$(M$,
L+1,1))-CD NEXT RETURN
2720
2800 REM SELECT WAVEFORM(S)
2805 REM [3*CRP] [CRR] [RVS ON] [CRD]
2900 PRINT"TT]] VOICE"V"]"
2901 REM [CRP] [13*CRR] [RVS ON]
2950 PRINT"]]]]]]]]]]]]]]F3-WAVE"
3000 LN=5 GOSUB2500
3020 PF=0 L=LEN(M$) F1=0 F2=0 F3=0 F4=0 WV(V)=0
3030 FORSB=1TOL W$(SB)=MID$(M$,SB,1)
3040 IFW$(SB)<>"T"ANDW$(SB)<>"S"ANDW$(SB)
<>"P"ANDW$(SB)<>"N"THEN3000
3050 NEXT
3060 FORSR=1TOL
3070 IFW$(SR)="T"ANDF1=0THENWV(V)=WV(V)+16 F1=1
3080 IFW$(SR)="S"ANDF2=0THENWV(V)=WV(V)+32 F2=1
3090 IFW$(SR)="P"ANDF3=0THENWV(V)=WV(V)+64 PF=1 F3=1
3100 IFW$(SR)="N"ANDF4=0THENWV(V)=WV(V)+128 F4=1
3110 NEXT WV(V)=WV(V)+1
3111 CP=1 CL=1 FORK=1TO2
3120 IFF1=CPTHENAC=55303+ME GOSUB3500
3130 IFF2=CPTHENAC=55577+ME GOSUB3500
3140 IFF3=CPTHENAC=55497+ME GOSUB3500
3150 IFF4=CPTHENAC=55583+ME GOSUB3500
3155 CP=0 CL=14 NEXT
3160 IFPF<>1THENRETURN
3161
3165 REM SET PULSE WIDTH
3166 REM [3*CRP] [CRR] [RVS ON] [RVS OFF] [CRD]
3170 PRINT"TT]] P.WIDTH?]]" LN=4
3200 GOSUB2500 IFM$="E"THENRETURN
3210 S$=MID$(M$,1,1) IFS$<>"H"ANDS$<>"L"THEN3200
3220 IFLEN(M$)=1THEN3200
3230 FORL=2TOLEN(M$) S$=MID$(M$,L,1)
3250 IFASC(S$)<48ORASC(S$)>57THEN3200
3260 NEXT
3270 S$=MID$(M$,1,1) VLU=VAL(MID$(M$,2,LEN(M$)))
3271 IFS$="H"ANDVLU>15THEN3200
3272 IFS$="L"ANDVLU>255THEN3200
3273 IFLEN(M$)<3THENM$=M$+"  "
3280 IFS$="H"THENPOKEAD+3+((V-1)*7),
VLU CL=1306+ME GOSUB2700
3290 IFS$="L"THENPOKEAD+2+((V-1)*7),
VLU CL=1392+ME GOSUB2700
3300 GOTO3200
3500 FORL=ACTOAC+LN:POKEL,CL:NEXT RETURN
3550
3600 REM SET FILTER RESONANCE
3605 REM [3*CRP] [CRR] [RVS ON] [RVS OFF] [CRD]
3685 REM [CRP] [8*CRR] [RVS ON]
3690 PRINT"]]]]]]]]]F3-RESONANCE"
3696 REM [3*CRP] [CRR] [RVS ON] [RVS OFF] [CRD]
3700 PRINT"TT]] RESONANCE?]]" LN=2
3710 GOSUB2500
3720 S$=MID$(M$,1,1) IFASC(S$)<48ORASC(S$)>57THEN3710
3730 IFLEN(M$)>1THENS$=MID$(M$,2,1) IFASC(S$)
<48ORASC(S$)>57THEN3710
3740 EC=VAL(M$) IFEC>15THEN3710
3750 LN=3
3760 M$=" "+M$ IFEC<10THENM$=M$+" "
3790 CL=1770 GOSUB2700 RETURN
3800 POKEAD+23,(EC*16)+FT
3830 RETURN
3950
3960 REM SYNCHRONIZATION
4000 CL=4 AC=55777+ME LN=3 SY(V)=0
4010 IF(PEEK(55778+ME)AND15)=4THENCL=1 SY(V)=2
4020 GOSUB3500
4030 RETURN
4300
4400 REM SELECT RING MODULATION
4500 CL=4 AC=55783+ME LN=4 RM(V)=0
4510 IF(PEEK(55784+ME)AND15)=4THENCL=1 RM(V)=4
4520 GOSUB3500
4530 RETURN
4540
4900 REM SELECT FILTER
4905 REM [CRP] [21*CRR] [RVS ON]
4950 PRINT"]]]]]]]]]]]]]]]]]]]]]]F5-FILTER"
4955 REM [3*CRP] [CRR] [RVS ON] [RVS OFF]
5000 PRINT"TT]] TYPE?]   " CL=1 LN=3
FL=0 F1=0 F2=0 F3=0 FT=0
5010 GOSUB2500 IFM$="E"THEN5110
5020 IFLEN(M$)>3THEN5010
5030 FORLR=1TOLEN(M$) LN=6
5040 S$=MID$(M$,LR,1)
5045 IFS$="O"THENFL=0 PRINT"]" GOTO5065
5050 IFS$<>"L"ANDS$<>"H"ANDS$<>"B"THEN5010
```

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We are always actively seeking programs for publication – either for Open Forum, the machine pages or Star Game. When sending in a program for consideration, a clear program listing should be sent, together with, wherever possible, a saved copy on cassette. Documentation – usually not more than 1000 words – should start with a general description of the program: what it does, and then some detail of how the program itself is constructed. We pay very competitive rates, according to the length and nature of the program and the quality of the accompanying documentation.

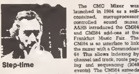
Timer on Amstrad

This programme will test the reactions of all CPC 464 owners. Both eyes and ears are tested so make sure the volume control is turned well up!

The program is fully documented with Rem statements.

```
10 RANDOMIZE TIME
20 DIM t(10)
30 PAPER 0:PEN 1: MODE :
40 PRINT"This program tests your reaction time"
50 PRINT"The first test is for your eyes,  next  your ears and then mixed  '
60  PRINT"With the eye test there will appear a   yellow square somewhere on the
 screen.  You then press a key or a fire button asfa
st as possible"
70 PRINT"Every time there  will  be  ten  tests. Between each test you also pres
s a key  or a fire buttor'
80 PRINT"Your average will be calculated'
90 PRINT:PRINT"copyright A.C.Karsten 1984'
100 PRINT:PRINT"press any key"
110 i$=INKEY$:IF i$="" THEN 110
120 CLS
130 BORDER 16
140 WINDOW #0,1,40,20,25:WINDOW #1,1,40,1,19
145 REM set up string for square
150 a$=CHR$(143)+CHR$(143)+CHR$(10)+CHR$(8)+CHR$(8)+CHR$(143)+CHR$(143)
160 PAPER#0,3:PEN#0,2
170 FOR u=0 TO 9
180 CLS
185 REM randomise waiting time between 1 and 11 seconds
190 g=INT(RND(1)*10)+1:g1=TIME
195 REM for full explanation of time variable see handbook page 48,51
200 g2=TIME :j$=INKEY$:IF J$<>"" THEN PRINT"To early'":GOTO 19C
210 IF ((g2-g1)/300)<g THEN 200
220 x=INT(RND(1)*35)+1:y=INT(RND(1)*15)+1
230 LOCATE #1,x,y:PRINT#1,A$;:t=TIME
240 i$=INKEY$:IF i$="" THEN 240
250 t(u)=(TIME-t)/300
```

The Music Box



Step-time

I've received a letter from the delightfully named Edward Primrose of Paris. Yes, *Music Box* is an international column! M Primrose writes that he is "absolutely tantalised by the Allen & Heath Brenell products" I mentioned in a recent column. He asks for more information.

I'll be sending Edward's query on to Allen & Heath Brenell, but in case any other readers would like to know more about these items, here's a brief reminder.

The CMC Mixer was launched in 1984 as a self-contained, microprocessor controlled sound mixer. A&HB introduced the CMI64 and CMS64 add-ons at the Frankfurt Music Fair. The CMI64 is an interface to link the mixer with a Commodore 64. This allows indexing by channel and track, route paging and sequencing (2048 events). The CMS64 extends the sequencer facility, allowing generation of SMPTE tape time code and syncing to the code or to an external drum machine.

This kit won't come cheap, but the spec looks impressive. Allen & Heath Brenell can be contacted at 69 Ship Street, Brighton BN1 1AE (tel 0273 24928).

Also for the Commodore is the Joreth Music Composer System from Joreth Music, who can be contacted on 0386 831615. This is a MIDI sequencer package but, apparently, with a difference. The difference is that the Joreth supports sequencing in real-time, step-time or a mixture of the two. The step-time software also includes a routine for displaying scores on screen or dumping them to a Commodore MPS 801 (or equivalent) dot-matrix printer.

The program is supplied on disc only and, obviously, includes full disc filing and all the regular MIDI sequencer features. An unusual – and welcome – touch is the inclusion of a facility allowing the syncing of input and output events to triggered equipment using standards other than MIDI: drum machines, sequencers and SMPTE coded tape, for example. All-in-all, it sounds highly impressive.

Meanwhile, owners of the BBC computer may be interested to hear of another synthesizer/sequencer package using the BBC's internal sound chip and QWERTY keyboard to generate all the sounds. The package is called *Music Maker* and comes from FSoft, PO Box 352, Brighton BN1 3AY (tel: 0273 738042). It's priced at £9 and supports all the usual features plus on-screen score display during sequencing, the ability to mix up to three tracks and a rhythm track in real-time and full editing of sequences.

Gary Herman

The Music Box is a weekly column with news, reviews and readers comments on all aspects of micros and music.

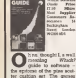
Any readers with experience of computer music making or companies with new product news are invited to write or drop a line explaining what they're doing to Gary Herman, The Music Box, 12-13 Little Newport Street, London WC2H 3LD

Open Forum

```
260 PRINT"reaction time: ";:PRINT USING"##.##";t(u)
270 i$=INKEY$:IF i$="" THEN 270
280 CLS#1
290 NEXT u
300 CLS
310 ti;d=0
320 FOR x=0 TO 9:ti;d=t(X)+ti;d:NEXT x
330 ti;d=ti;d/10
340 PRINT"The reaction time of your eyes is:";:PRINT USING "##.##";ti;d
345 REM next block for the ear test
350 PRINT"Now for your ears"
360 i$=INKEY$:IF i$="" THEN 360
370 FOR u=0 TO 9
380 CLS
390 g=INT(RND(1)*10)+1:g1=TIME
400 g2=TIME:j$=INKEY$:IF J$<>"" THEN PRINT"To early!":GOTO 390
410 IF ((g2-g1)/300)<g THEN 400
420 PRINT#1,CHR$(7):t=TIME
430 i$=INKEY$:IF i$="" THEN 430
440 t(u)=(TIME-t)/300
450 PRINT"reaction time: ";:PRINT USING"##.##";t(u)
460 i$=INKEY$:IF i$="" THEN 460
470 NEXT u
480 CLS
490 ti;do=0
500 FOR x=0 TO 9:ti;do=t(X)+ti;do:NEXT x
510 ti;do=ti;do/10
520 PRINT"The reaction time of your ears:";:PRINT USING "##.##";ti;do
525 REM next block for the mix test
530 PRINT"Now a combination of both"
540 i$=INKEY$:IF i$="" THEN 540
550 CLS#1
560 FOR u=0 TO 9
570 CLS#1
580 CLS
590 g=INT(RND(1)*10)+1:g1=TIME
600 g2=TIME:j$=INKEY$:IF J$<>"" THEN PRINT"To early!":GOTO 590
610 IF ((g2-g1)/300)<g THEN 600
620 x=INT(RND(1)*35)+1:Y=INT(RND(1)*15)+1
630 IF RND(1)<0.5 THEN PRINT #1,CHR$(7) ELSE LOCATE #1,x,y:PRINT #1,a$
640 t=TIME
650 i$=INKEY$:IF i$="" THEN 650
660 t(u)=(TIME-t)/300
670 PRINT"reaction time:";:PRINT USING"##.##";t(u)
680 i$=INKEY$:IF i$="" THEN 680
690 NEXT u
700 CLS
710 FOR x=0 TO 9:ti;dg=t(X)+ti;dg:NEXT x
720 ti;dg=ti;dg/10
730 PRINT"The reaction time of eyes/ears:";:PRINT USING "#.##";ti;dg
740 PRINT"The reaction time during the test.";:PRINT USING"#.##";(ti;d+ti;do+ti_
dg)/3
750 PRINT" Another TEST?  then press space"
760 i$=INKEY$:IF i$="" THEN 760
770 IF i$=" " THEN RUN
```

Tuner
by A Karsten

Book ends



Book *The Which? Software Guide* **Price** £7.95 **Micro** Most **Supplier** Consumers Association 14 Buckingham Street London WC2N 6DS

Oh no, thought I, a well meaning *Which?* guide to software – the epitome of the pine scatter cushion set. The games section reinforced this prejudice, games don't give themselves to the rational standards of the Consumers' Association.

Games also tend to be short lived, with a few notable exceptions, and well reviewed by the specialist press, despite the introduction's assertion to the contrary. Then I reached the review of business programs and after that computing aids, education and household. These groups are far less often reviewed and have perennial appeal.

Though it's not perfect, all the major micros are catered for by this software equivalent of the Good Food Guide. Fast food freaks won't find of much use, but it should help the older, less experienced eater avoid indigestion.

John Minson

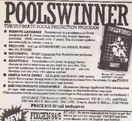
Book *Interfacing the BBC Microcomputer* **Price** £7.95 **Micro** BBC **Supplier** Macmillan Higher and Further Education Division Houndmills Basingstoke Hants RG21 2XS.

The BBC is often thought of as an experimenter's computer and the 150 pages of this book bear that out. It calls for knowledge of Basic programming, the workings of machine code and electronics, plus the ability to comprehend much highly concentrated information.

From this base it discusses the concepts of data transfer, and introduces the 8-bit parallel user port, the 1MHz bus and analogue to digital conversion. The final chapter presents a range of practical applications, complete with circuit diagrams and listings. There are also five appendices, including data sheets and a summary of connections, plus an index.

A book, therefore, which tackles a difficult subject in a knowledgeable, no-frills fashion, suitable for those who already have a firm technical grasp of computers.

John Minson


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Arcade Avenue



Loose ends

This week I want to clear up one or two loose ends so let's begin with the password for the game *Spectacles* that accompanies Design-Design's *Dark Star*. Following a request for someone to hack it, I was inundated with replies, especially after one of the monthly mags printed the answer. But even before that, it seems to be one of the worst kept secrets in history and I don't know why no one bothered to send it in before. My thanks go to everyone who wrote in, and especially to Mike Beasely who even went so far as to ring up. The answer is 'Everyone's a nervous wreck' but since so many people knew that there can be no prizes for revealing it.

As to what the game is about, here is a summary from the first to write in, Michael Banbrook of Streatham. "I must congratulate Design-Design on an excellent send up of teletext, a sort of computer *Spitting Images*. They take the wicked mickey out of your rival magazines, especially C&VG, Keith Campbell, Ultimate, MSX and their own programmers. My main criticism is the language which has some explicit swearing (whatever you do, don't let your parents see it!)"

Mike's letter was one of the most enjoyable we've had and he goes on to give us some tips for Microsphere's superb *Skool Daze*. "If you stand behind Mr Withit on the left hand side of the classroom he won't see you to give you lines. Here are the history dates that Mr Creak asks you – Lendanto 1571, Yorktown 1781, Flodden 1513, Shrewsbury 1403, Poiters 1356, Hastings 1066, Evesham 1265, Lexington 1775, Borodino 182, Balaclava 1854, Trafalgar 1805, Sedgemoor 1685. Also, on Melbourne House's excellent adventure *Sherlock*, try typing Call 28 (apologies to Tony Bridge for slipping this in here). Can anyone tell me how to do screen dumps to an Alphacom 32 with the Ocean games protected by Speedlock? I would also greatly appreciate tips and *Pokes* on Mastertronic's *Finders Keepers*.

"My worst buys are *Designer's Pencil* by Activision, the Spectrum version of *Ghostbusters*, *The Dungeon Builder* by Dream Software (help! – can anyone work the graphics facility?). *Combat Lynx* by Durell is not bad but has far too many keys. My best buys are *Skool Daze* – addictive and cheap, *Finders Keepers* – the best cheapo yet, only £1.99, addictive, brilliant and excellent value (Mastertronic are getting good), *GoGo the Ghost* by Firebird for the Commodore – only £2.50 and really good (please do a conversion for the Spectrum!)"

Thanks for your comments and I hope to hear from you again, Mike. I agree about both *Finders* and *GoGo* – given the quality at those prices you would have to be barking mad not to buy them and I hope to see them both in the charts very soon.

Now then, I did promise to print the routine necessary to get the infinite lives *Poke* into *Knight Lore*, courtesy of Barrie Collins of London. "Save this listing to tape, position *Knight Lore* just past the initial header and run the new program, start the tape and everything should happen automatically."

```
10 Clear 24831 : Restore : Gosub 60 : Poke 62000,61 : Poke 62178,0 : Poke 62358,201 : Poke 62410,261 : Poke 62411,201 : Randomise USR 62374
20 Poke 53567,0
30 Print Usr 24532
40 Data 23296, 23309, 221, 33, 64, 156, 17, 14, 4, 62, 256, 55, 206, 86, 5, 201
50 Data 41012, 41021, 33, 113, 158, 17, 48, 242, 1, 172, 1, 178
60 Read a,z: For p=a To z: Read d: Poke p,d: Next p: Randomise Usr a: Return
```

Whilst on the subject I'd like to congratulate Colin Gardner of Crawley for finishing *Knight Lore* (74% 38 days) Philip Moore of South Ruislip for finishing *Underwurlde* (28%) and Tsourinakis Paraskevas (I hope I've got your name right) of Greece who has finished both and gives us these tips on some important locations. "If you mark the top left of the map as 1,1 the exits are at 1,4, 1,10; and 1,14. The start location is at 15,10. The weapons will appear in one of these positions for sword, bow and club respectively – 17,11, 20,8, 9,12 or 17,15, 25,2, 15,7, or 19,14; 11,7 or finally 18,11; 12,16, 23,9.

Let's stick with Ultimate for the moment but move on to their Commodore game *Staff of Karnath*. Darren Riley of Barrow in Furness has collected nine of the 16 pieces of the pentacle and wants to know how to get those on the bed, in the cobweb and in the library.

"I have found uses for Knossus to lift up the snake, Aeolus to put out the fire in the great hall, Stoly stops the electric door and Ibralum momentarily paralyses the big monsters in the dungeons." Well, Darren, I'm sure that you have noticed the rug on the floor of the timeless room, where the piece is on top of the bed, which is of course the flying carpet mentioned on the cassette cover. I expect you've also tried using all of your spells on it as well, but the trick here is one of position. Firing the correct spell from the doorway on the left will cause the carpet to ripple and if you, quickly, walk to the back of it you will be lifted up.

Incidentally, the timeless room literally makes your 'time less' at a frightening rate while you are here, which is the main reason that games don't really last six hours, so it pays to be quick if you can't avoid this room. Other room names also give a clue to how to solve them and the waiting room in particular should be taken literally.

As for the library I don't know, but considering the amount of energy lost when passing the suits of armour to get to it, and considering the impossibility of passing the skeleton when you collect the piece, perhaps there is a hidden door that will let you escape into an adjacent room. Remember that secret compartments are also mentioned on the cover. Answers please someone!

Darren goes on to tell us that he has scored 108,000 dollars on the Commodore *Ghostbusters* (account number 00321204). Also "on the Spectrum game *Brian Bloodaxe* I can use the spade for digging through certain platforms but I don't know what to see the sword on". Can anyone reveal all?

Tony Kendle

We are searching for the top UK computer games player – the best there is!

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Between now and September Tony Kendle will be keeping you up to date on the *Arcade Avenue* page with just who has the scores to beat. Then, in September, the top three scorers on each machine will battle it out for a place in the final and the chance to be the first to play our top secret games.

	Commodore	BBC	Spectrum	Amstrad
Game 1	Suicide Express	Elite	Technician Ted	Sorcery
Game 2	Beach Head	Jet Pac	3D Star Strike	Splat!
Game 3	Shoot the Rapids	Chuckie Egg	Cyclone	Manic Miner

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Tony Bridge's Adventure Corner



Male conventions

The next time that you are engaged in a healthy hack 'n' slay, listening with relish to the crack of orc-skull, and generally wallowing in the usual masculine macho blood-and-guts to be found in the average adventure, spare a thought for those of us who find this rather offensive. A letter from Ms Sun Yann of Dudley raises an interesting point: "I am writing to complain about adventure programmers. When I buy a new adventure, I always find that my character is 'the Hero'. Why in these fantasy games do the normal (?) sex rules apply – why is it only men or male characters that are the control characters? Imagine if every game you played forced you to be female. Think about it. All we gamers are doing is saving the world from darkness or picking up treasures, so rules of 'women as prizes' shouldn't apply. Please, programmers, you are writing games for all of us!"

Two years ago, in the mists of time, the Adventure Corner covered this very point, in talking about *Love*, an adventure from Remsoft that disappeared, I'm glad to say, without leaving a ripple on the adventure pond. This game went completely the other way and cast the player in the role of a helpless female, who, believe it or not, actually had to strip off (in the game, that is) to complete the adventure! As with *Love*, and the equally awful, but more recent efforts from CCS (the Adventures for Girls), the result of consciously attempting to aim story lines at female players is merely embarrassment. Frankly, I'd rather software writers didn't bother, but instead just ignored the whole problem.

Andrew Kershaw of Hull writes: "I have been playing *Adventureland* – the graphics are superb. I was doing quite well until I reached the deep chasm and tried to get the object from the Lava. Any ideas? And also, how do I go about getting the Scott Adam's Book of Hints?"

Adventureland is a program that started it all off, at least on the home micro – it took a little while longer for the original 'Classic' Adventure to make its way from the mainframe computers to the micro. And as such, it should command our proper respect – even after all these years, it is still a great adventure.

Now, to get the object from the Lava, you must first of all get some fire bricks. You'll have seen the bricked-up window, and you must approach it from the Royal chamber. Carry these, very carefully down to the lava, and then drop them to form a dam. The Lava will eventually cool down, leaving the object of your desires to be collected. As to the Book of Hints, which are mostly very cryptic (although there are one or two out-and-out solutions), it has been rather difficult to get hold of, but now Adventure International is supplying retailers with Scott Adams Adventure Centres. These will be kept stocked up with all the adventures (including the mostly excellent Channel 8 games) together with the AI programs, like *Preppie* and *Diskey* – and the Book of Hints.

Speaking of Adventure International, some news of upcoming adventures from them. The Scott Adams machine rolls on, sweeping all before it, with Questprobe 3 coming up in April or May. This is *The Fantastic Four*, which will, in the first instance, feature The Human Torch and The Thing as your alter egos.

Brian Howarth, whose name will be well-known from the Channel 8/Mysterious Adventures series, is now working for Adventure International, and his new programs, due now, are *Midwinter*, *After The Fire* and *Beyond the Infinite* – "available soon" is *Through the Enchanted Mirror*. I haven't seen any of these, but, as I've pointed out before, Howarth's titles are always very evocative, and that is 50% of the battle won.

Artic have recently released a new adventure, called *Dead at the Controls*. Written by Dave Stone, this is a very stylish adventure which kept me slaving over the hot Spectrum for hours. The character set is redesigned into an Amstrad-looking style, with serifs – why do Spectrum authors have to make the machine look like every other machine *but* the Spectrum? Descriptions and text input take up the lower two-thirds of the screen, with some lovely graphics in the top third. It's all a bit untidy, though, with the graphics and text gradually scrolling up the screen and disappearing with more input. There is also no provision, that I could find, anyway for turning the graphics off.

Once into the game, however, these drawbacks don't matter too much. You are Captain Ferret (well, of course you are) and you're circling a strange planet when horrors of horrors, your trusty ship is knackered by their defence system. Your escape promptly explodes, leaving you to parachute slowly to the surface.

There are plenty of Red Herrings, and only one or two of the objects to be found actually help in any way. But there *is* a calculator – thus you should *Press* and then *Examine*. Free clue over, this will get you into the next round of locations and will be very useful throughout the adventure, different numbers having different effects. In general, the program works well.

Dead at the Controls is a welcome program from Artic – it's not extremely difficult, but has a lot of humour and a lot of Red Herrings, which will keep you knocking at many a wrong door! With *Curse of the Seven Faces*, mentioned in this column more than once, Artic have come back into the adventuring fold at last. They were, after all, one of the very first pioneers in Britain and still retain a cherished position in the hearts of any ex-ZX81'er.

Saturday 18 March saw the official opening of the Adventurer's Guild. Crowds of would-be adventurers gathered in darkest Gravesend for the event, including many regular correspondents and readers of this page.

The brainchild of Ken Matthews and his partner John Miles, the Guild is the latest retail outlet for chess machines, computer hardware, and role-playing modular games as well adventures.

Other facilities include a speedy and efficient mail order service, and a friendly, well-used Adventure Helpline (on 0474 334008, during office hours).

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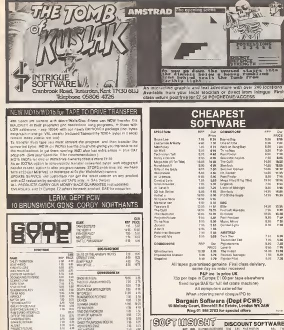
....

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....

This series of articles is designed for novice and experienced Adventurers alike. Each week Tony Bridge will be looking at different Adventures and advising you on some of the problems and pitfalls you can expect to encounter. So if you have an Adventure you want reviewed or if you are stuck in an Adventure you cannot progress any further write to Tony Bridge, Adventure Corner, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 3LD.


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Sherlock on Commodore 64. Keys to Basil and Tricia's flats? Where is the opium den? Who do you ask about the old mill road? Shaun McCabe 20 Upperty Road Currock Carlisle Cumbria

The Stolen Lamp on ABC I cannot get started at all. Plummer 302 Langland Road, Netherfield Milton Keynes MK6 4HY

Velnor's Lair on Spectrum How do I make the hungry looking sharks into placid looking sharks? They ignore everything R Foster 66 Glenfield Way Glenholt Park Plymouth.

West on QL Is there anything special about the small bedroom? What money under which boxes? John Bews 1 St Leonards Court Bledington Oxford OX7 6XR (Kingham 862)

Sherlock on Spectrum 48K. How do I get into Trixie Fender's house in Perriman Street? R Travis, 4 Bar Lane, Staincross, Barnsley S Yorkshire S75 6DQ

Fantasia Diamond on 48K Spectrum. Unable to open musical door brown door rusty door etc Beyond window in castle Chris Coldbalk, 32 Millbrook Road East Shirley Southampton SO1 0HY

Forest at World's End on Amstrad CPC 464 I can kill the dragon at the precipice. What next? Stephen Riley, 84 Walton St Shawlands Glasgow

Fantasia Diamond on Amstrad CPC 464 How do I get the golden eagle? I have got everything else but can't even find it Terry Crowe 26 Stackhorse Cres Amersham Bucks

West on Sinclair QL. How do I move the boxes and how do I get across the stairwell? Ike Carman 41 Bannister St Withernsea North Humberside.

Knights Quest on the Spectrum 48K. How do I get past the recent ice fall which blocks the path? S Tomalin, 220 Marlborough Road, Romford Essex.

Jewels of Babylon on Amstrad CPC 464 have found secret passage in caves past sleeping pirate How do I open the door? Graham Nasmith, 85 Mill Lane, Clewer Village Windsor Berks

Dunderwurzide on Spectrum 48k How do I get round the Horned Guardian at 16 Beer? Please Paul Coyne 36 Chapel Hill, Clayton West, Huddersfield, West Yorkshire

Return to Eden on Amstrad. How do I buy a Habihome? Jonathan Hill 40 Hampstead Drive Mackworth Derby

COMPUTER SWAP

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Top 10

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2 (—) Punchy (MasterTronic)
3 (—) Dick Shoot (MasterTronic)
4 (—) Tank Commander (T EMI)
5 (7) Phantom Attack (MasterTronic)
6 (1) Doodlebug (MasterTronic)
7 (—) Sub Hunt (MasterTronic)
8 (—) Mass Gold (C.S.M.)
9 (9) Undermine (MasterTronic)
10 (6) Flight 015 (Craig Communications)
(Compiled by Websters Software)

Commodore 64
1 (2) Mega-Hits (Beau Jolly)
2 (1) Chiller (MasterTronic)
3 (3) BMX Racers (MasterTronic)
4 (9) Football Manager (Addictive)
5 (5) Booty (Firebird)
6 (10) Big Mac Mad maintenance Man (MasterTronic)
7 (8) 1-9-9 (MasterTronic)
8 (—) Ghostbusters (Activision)
9 (—) Fighter Pilot (Digital Integration)
10 (—) Azimuth Head Alignment Tape (Interceptor Micro)
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Spectrum
1 (2) Bruce Lee (US Gold)
2 (—) Raid over Moscow (US Gold)
3 (9) Wizards Lair (Bubble Bus)
4 (3) Mega Hits (Beau Jolly)
5 (3) Booty (Firebird)
6 (—) Moon Cresta (Incentive)
7 (4) Airwolf (Elite)
8 (10) Skool Daze (Microsphere)
9 (—) Everyone's a Wally (Mikrogen)
10 (—) Ghostbusters (Activision)
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BBC B
1 (—) Snooker (Visions)
2 (—) Mini Office (Database)
3 (3) Castle Quest (Micropower)
4 (—) Manic Miner (Software Projects)
5 (8) Elite (CSM)
6 (—) White Knight Mark 12 (BBC Publications)
7 (7) Castle Quest (Disc) (Micropower)
8 (—) Sabre Wulf (Ultimate)
9 (10) Spectipede (MasterTronic)
10 (—) Star Maze (MasterTronic)
(Compiled by Websters Software)

ATARI
1 (2) Compilation Tape 1 (English)
2 (4) Colossus Chess (English)
3 (1) F15 Strike Eagle (Centresoft)
4 (—) Encounter (Hi-Tech)
5 (6) Solo Flight (Centresoft)
6 (5) Zaxxon (Centresoft)
7 (—) Computer War (Atari)
8 (—) Sea Commander (Thorn/EMI)
9 (8) O'Reillys Mine (Centresoft)
10 (3) Attack of Mutant Camels (Llamasoft)
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C 16
1 (1) Williamsburg (Microdeal)
2 (4) Roller Kong (Melbourne House)
3 (3) Stellar Wars/Blitz (CBM)
4 (8) Games Tape 2 (Melbourne House)
5 (2) Berks (CRL)
6 (6) Crazy Golf (CBM)
7 (7) Games Tape 1 (Melbourne House)
8 (9) Flight 015 (Craig Communications)
9 (5) Vegas Jackpot (Master Tronic)
10 (10) Spiderman (Adv Int)
(Compiled by Websters Software)

Amstrad
1 (—) Manic Money (Bernoulli)
2 (1) Sorcery (Virgin)
3 (8) Mini Office (Database Pub)
4 (—) Fighter Pilot (Digital Integration)
5 (—) Football Manager (Addictive)
6 (10) Jewels of Babylon (Interceptor Micros)
7 (4) Punchy (Amsoft)
8 (6) Heathrow Int (Hewson)
9 (—) Ghouls (Micropower)
10 (—) Dark Star (Design)
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Diary

Event	Dates	Venue	Admission	Organisers
Northern Computer Show	April 16-18 10.00am-6.00pm	Belle Vue Manchester	Free in advance from organisers	Reed Exhibitions 01-643 8040
Apple 85	May 8-10 10.00am-6.00pm May 11 10.00am-4.00pm	Novotel London W6	Free in advance from organisers	Database Publications 061-456 8383
Electron & BBC Micro User Show	May 9-11 10.00am-6.00pm May 12 10.00am-4.00pm	New Horticultural Halls London SW1	£3.00 adults £2.00 children	Database Publications 061-456 8383



Readers' Chart No 17

1	(2)	Knight Lore *(Spectrum)*	**Ultimate**
2	(-)	Soft Aid *(Spectrum/ C64)*	**Various Artists**
3	(1)	Alien 8 *(Spectrum)*	**Ultimate**
4 =	(3)	Ghostbusters *(Spectrum/ C64)*	**Activision**
=	(4)	Match Day *(Spectrum/ C64)*	**Ocean**
6	(-)	Football Manager *(Spectrum/ C64/ BBC/ Electron/ Oric/ Atmos/ Dragon/ Vic 20/ ZX81/ Dragon)*	**Addictive Games**
7	(-)	Underwurlde *(Spectrum)*	**Ultimate**
8	(7)	Jet Set Willy *(Spectrum/ C64/ Amstrad)*	**Software Projects**
9	(-)	Elite *(BBC/ Electron)*	**Acornsoft**
10	(-)	Tir Na Nog *(Spectrum/ C64)*	**Gargoyle**

Winning phrase No 13: "Frankie goes to Luton!" sent in by Rodrew Hawthorn, St Albans Road, Sandridge, St Albans, Herts, who receives £25

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And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever – but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's chart, published above.

You can still vote in the chart without making up a slogan – but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP

Voting for Week 20 closes at 2pm on Wednesday April 10 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name .... My top 3: Voting Week 20
Address .... 1...
.... 2...
.... 3...
My phrase is: ....

New Releases

WINNER

The Enterprise, like most new computers, has quite a few programs which are not entirely wonderful

On the other hand it does have *Fantasia Diamond* which was a pretty good graphic adventure on the Spectrum

Graphically it isn't going to make anyone gasp at the *Enterprise* screen display, being mainly simple chunky pictures. We're going to have to wait a little longer to see what the machine is really capable of.

On the other hand the actual text adventure part is very good. The Fantasia Diamond has been stolen and it's up to you to get it back. There are pseudo-independent characters, who don't sing about gold, but can be as unhelpful as Thorin ever was, there is also a mysterious gnome whose casting of his fishing rod seems to have a strange significance

The *Enterprise* text display is pleasing on the eye and all in all this is a winner

Not technically shattering, agreed, but above the usual level of first programs for a new machine

Program *Fantasia Diamond*
Price *£7 95*
Micro *Enterprise*
Supplier *Enterprise*
31-37 Hoxton St
London N1

COLOSSAL DRAGON

The dreaded *Colossal Cave* adventure is here yet again. This creaking opus has been around since computer time began and, although tweaked with here and there, remains essentially unchanged. Its longevity is explained partly by reverence for its venerable sisture and partly by the fact that it remains one of the most difficult adventure challenges of all.

The latest version is for the Dragon 64, which was not a very successful machine, but has much to recommend it if you accept the limited amount of software for it (excluding Dragon 32 compatibility, of course) – for one thing it's very cheap these days, if you can find it.

Compusense, well known for a range of serious utilities for the Dragon machines as well as peripherals, has issued this *Colossal Cave* variant on disc with a brief sheet of instructions and have included a save/load option which is vital (but missing in some versions)

Don't buy it for technical innovation. The language analysis is pretty simple there are no graphics either. Buy it because you regularly crack the *Times* and *Guardian* crosswords in under three minutes and are looking for a new challenge

Program *Colossal Cave*
Price *£9 95*
Micro *Dragon 64*
Supplier *Compusense*
POBox 169
286D Green Lanes
London N13 5TN

COSMIC SPELL

Chaos, magic and death on the plane of Limbo is the homely title of the latest offering from Games Workshop. It is a wargame wherein two or more sorcerers pit their wits and cosmic forces against one another. The art of the game is the selection of the most effective spell to meet each new problem, there are an amazing number of them, each with subtly different properties

In fact, *Chaos* is pretty much a pure strategy game – very much based on the Dungeons and Dragons derived board games except that the computer does all the calculations and each spell is coloured and animated

The big advantage is that you can play against the computer which will select its own spells for attack and defence and can be instructed to play at various levels of skill. Don't think of this game in terms of an adventure, but instead as a clever wargame with nice effects. I think you'll rate it highly indeed

Program *Chaos*
Price *£7 95*
Micro *Spectrum*
Supplier *Games Workshop*
27/29 Sunbeam Rd
London NW10 6JP

HIGH RISE

Activision have been coming up with some nice games for the *Commodore* recently, and *Rock n' Roll* is well up to par with them. Your task, as well animated steeplejack sprite, is to fix into place screens of moving girders (sometimes to a pre-determined pattern) to proceed to the next construction level – there being 100 in all.

If this doesn't sound too impressive, then worry not, as the action continues to the best computer generated music since *Ghostbusters*.

To put a competitive slant on the proceedings, you earn money for each girder fixed. . . but are charged for each you have to unfix afterwards – an all too common event unless your IQ registers well above the Richter scale

I don't know about you, but I found it well. riveting

Program *Rock 'n Bolt*
Price *£10 95*
Micro *Commodore 64*
Supplier *Activision*
15 Harley House
Marylebone Road
London NW1 5HE

This Week

Program	Type	Micro	Price	Supplier
Amsprite	Ut	Amstrad	£14.95	Cable
Sub Strike	Arc	BBC	£6 50	Tomorrow s Drm
Micro Trader	Ut	BBC B	£200	Meadow
BBC B Mathematics	Ed	BBC B	£19 95	DEP
Gremlins	Ad	Commodore 64	£9 95	Adventure
Master of the Lamps	Ad	Commodore 64	£10 99	Activision
Quasimodo	Arc	Commodore 64	£6 95	US Gold
Rock n Bolt	Arc	Commodore 64	£10 95	Activision
Web Dimension	Arc	Commodore 64	£10.95	Activision
The Living Body	ED	Commodore 64	£18 95	Martech
Spitfire 40	S	Commodore 64	£9 95	Mirrorsoft
The Music Studio	Ut	Commodore 64	£14.95	Activision
Snardelle	S	Einstein	£12.95	Bubble Bus
Le Mans	S	Einstein	£14 95	Tatung
Graphic Designer	Ut	MSX	£14 95	Cable
Spreadsheet	Ut	MSX	£29 95	Kuma
Sprite Editor	Ut	MSX	£7 95	Cable

New Releases

ON THE PISTE

Richard Shepherd Software has produced its first non-adventure title – and its a goodie.

It didn't seem like it though I mean *Ski Star 2000* is not the sort of title to encourage optimism But this is a skiing game unlike any other, graphically it looks like a cross between a flight simulation program and Macintosh Icons

Previous skiing programs have consisted of a birds-eye view of a little figure in a white landscape which scrolls from top to bottom of the screen.

Instead, in *Ski Star* you get a goggle-eye view and have to control your movement by leaning left and right as the ski course scrolls past you The line graphics look a little like *3D Battlezone* growing from the far distance as you approach them

There are hills, trees and other obstacles to avoid as you also try to steer yourself between left and right flags And it's not easy

However one of the best features is the way, using an icon menu system, you can define your own courses and set your own hazard levels Course design consists of shunting little hill and flag shapes around a plan of the contest (this tends to obliterate the view from your goggles and thus makes the whole thing that much more difficult.

Its easy to use, easy to redefine and easy to grasp the basic principles of skiing with it – but it can be fiendishly difficult to play well Even if the idea of a skiing program fills you with boredom don't pass this one up – it's original and excellent.

Genuinely inventive

Program *Ski Star 2000*
Price *£7 95*
Micro *Spectrum*
Supplier *Richard Shepherd, Elm House, 23-25 Elmshott Lane, Cippenham, Slough, Berks*

SUB-STANDARD

Tomorrows Dream Software has recently released a couple of pretty decent machine code utilities Now we get the company's first arcade game, *Sub Strike* for the BBC.

It's pretty bad actually *Sub Strike* proves to be a very simple dodge and blast game where you move a little submarine around trying to blast wave upon wave of helicopters whilst dodging their missiles, depth charges and, on later levels, sub-seeking rockets

It's one of those games that was probably a reasonable sized hit in the arcades three years ago and now you can't remember what its name was Technically, it's at best workmanlike, as a game it a dull It even plays a horrible sea shanty each time you start, although thankfully there is an option to turn the sound off.

Program *Sub Strike*
Price *£8 50*
Micro *BBC*
Supplier *Tomorrows Dream, Richmond House, 1B Sydenham Road, Bristol BS8 5SH*

BANANAS

A quick one. One of the first Enterprise titles to be made available is *Dictator*, one of my favourite strategy games of all time

The idea is to run a small banana republic with the sole objective of staying in power as long as possible

Staying in power means playing off landowner against peasant, army against secret police and every other permutation At the same time you try and salt away treasury funds into your Swiss bank account and buy an escape helicopter if things get tough.

Its devious, original and very funny and still (two years after the Spectrum version first came out) entertains me no end

Program *Dictator*
Price *£7 95*
Micro *Enterprise*
Supplier *Enterprise, 31-37 Hoxton Street, London N1*

ENDURANCE

Einstein software is improving although there is still a big problem with price – simply because it always comes on 3½" floppies The latest title is *Le Mans* and has been written for the machine by Electric software

It is, inevitably, a road race game, you try to steer your turbocharged racing car around a track that scrolls towards you and try to dodge the other cars on the track. In fact, it's more or less *Pole Position.*

Graphically, it looks pretty good, the scrolling is neat, the sound effects are loud and pretty impressive and all in all it matches up pretty well to, say, a Commodore 64 equivalent. If I have a complaint it is that the game is actually extremely difficult to play, I could find one person who didn't crash within the first few moments Obviously, skill has to be acquired but it could put newcomers off.

The other problem, as I indicated, is the price I reckon something similar on the Commodore 64 would cost around £7 95 and that price difference is the kind of thing that is not going to help sell Einsteins Nevertheless, if you have one and want a game that's definitely a step up from previous Einstein programs this is worth looking at

Program *Le Mans*
Prise *£14 95*
Micro *Einstein*
Supplier *Tatung, Stratford Park 10, Telford, Shropshire*

This Week

Printer Dump	Ut	QL	£9 95	Posi-Tron
Gremlins	Ad	Spectrum	£9 95	Adventure Int
C5 Clive	Arc	Spectrum	£1 99	Scorpio
Kampiex	Arc	Spectrum	£9 95	Legend
Ski Star 2000	Arc	Spectrum	£7 95	R Shepherd
Spectrum Mstr math	Ed	Spectrum	£5 95	OEP
The Living Body	Ed	Spectrum	£10.95	Martech
Grand National	S	Spectrum	£6 95	Elite
Strip Pontoon	S	Spectrum	£1 95	High Voltage
Thermo Nuclear War	S	Spectrum	£5.95	Zircon
Interface	Ut	Spectrum	£40	Evesham Micro
Leonardo	Ut	Spectrum	£14 95	Creative Sparks
Communic with View	Ut	Tatung	£39 95	Kuma
Cave Fighter	Arc	Vic 20	£5 99	Bubble Bus

Key: **Ad** – adventure, **Arc** – arcade, **Ed** – education, **S** – strategy-simulation, **Ut** – Utility

Pick of the week

RENAISSANCE MAN

Leonardo from Creative Sparks is no ordinary graphics designer package It is to GDP what Rolls Royces are to Anglias or *Manic Miner* is to *Furtive Freddie* In other words it is very very sophisticated indeed, a 100 page booklets, worth of sophisticated, actually

To state the obvious first, you can draw in several colours in a 'brush-width that goes as small as a single pixel It has fill, arc, straight line, draw, circle, etc, etc, and you can save your creation to tape. So what's new?

A lot is new For example, one important concept is that of recursion, this means that anything you create by way of shape can than be used as a feature of the program to more shapes To give you an idea of how this works – suppose you create a rectangular 3D line shape, this can be then used as an integral object that can be painted on screen so you can create a screenful of boxes

It doesn't end there, though The program can also do a hidden line removal, treating shapes as though they were really solid Place one 3D rectangle partially over another and this routine will remove the parts of lines from the 'background' rect angle as though it were really covered – this can create stunning 3D effects not unlike *Knight Lore*.

A magnify feature allows every defined shape to be expanded or reduced in size and, as above, shapes can be treated recursively at different magnifications – allowing for the sense of things disappering into the distance. All the designs can be incorporated into your own program, to cut this short let's just say that I can't think of anything I want to do with graphics that the program doesn't let me do

Program	*Leonardo*
Price	*£14 95*
Micro	*Spectrum*
Supplier	*Creative Sparks* *296 Farnborough Road* *Farnborough* *Hampshire* *GU14 7NF*

DEMANDING

At last some pieces of what might be loosely described as games software for the QL are starting to trickle through *Area Radar Controller* is a simulation where you must play the part of an air traffic controller guiding planes in for safe landings and avoiding collisions

The game is fairly complex to play properly although the commands are summarised in a short two page booklet. It's a matter of changing heights, telling planes to circle and generally juggling 27 aircraft at once

The graphics are good enough for something which essentially only requires blips and figures on a screen. The sound effects, curiously enough, are really extensive – more like an arcade zap-em than in intellectually demanding simulation

AREA RADAR CONTROLLER QL

It's good if not staggering and is surprisingly cheap for a QL program, for that, at least, it deserves a glance or two.

Program	*Area Radar Controller*
Price	*£10.95*
Micro	*QL*
Supplier	*Shadow Soft* *70 Gooseacre* *Cheddington* *Nr Leighton* *Buzzard, Beds*

SIMULATION

Spitfire 40 is the title of a flight simulation from Mirrorsoft It's marked by superb, large graphics and an option to blast other aircraft from the sky at the same time as trying to fly the aircraft. It's not easy

Flying the Spitfire means handling all the controls you'd expect. Throttle, rudder, flaps, undercarriage The program also gives you a map showing the location of enemy aircraft in various levels of magnification

There are three screen displays, the map of the area, a view from the cockpit window and the flight panel showing the state of various instruments fuel, speed, horizon, altimeter, etc The graphics are superb in large hi-res detail, and subscribers to the gosh-wow school of graphics should buy it immediately

Nearly everything about the program is impressive, graphics, accuracy, playability (in terms of the combat sections), even the manual is good. There is a problem, though The incredible degree of graphic detail has to be paid for in program run time What this means is that when you are actually flying the plane, graphics like the horizon change in chunks instead of smooth scroll. The computer can't update the screen quick enough.

How much of a problem you find this is probably a matter of personal taste, I don t like it because I think it makes playing the game slower and more confusing than it really is It's an excellent program but some simulation purists might object to some aspects of it.

Program	*Spitfire*
Price	*£9 95*
Micro	*Commodore 64*
Supplier	*Mirrorsoft* *Holborn Circus* *London EC1P 1DQ*

Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases *Popular Computing Weekly* 12 13 Little Newport Street, London WC2H 3LD.

This Week

Activision 15 Harley House Marylebone Road London NW1 01 486 7588 **Adventure International,** 118 John Bright Street Birmingham B1 1BE, 021 643 5102 **Bubble Bus** 87 High Street, Tonbridge Kent TN9 1RX 0732 355962 **Cable** Cape House, 52 Limbury Road Luton Beds LU3 2PL 0582 591493 **Creative Sparks** Thompson House, 296 Farnborough Rd Farnborough Hants 0252 543333 **Elite,** 55 Bradford Street Walsall WS1 3QD 0922 611215 **Evesham** Micro Bridge Street Evesham, Worcs WR11 4RY, 0386 49641 **High Voltage** 16 Bridge Road Park Gate Hants, SO3 7AE **Kuma,** Kuma Computers 12 Horseshoe Park Pangbourne, RG8 7JW 07357 4335 **Legend** PO Box 435, Station Road London E4 7LX 01 524 8324 **Martech** Martech House Bay Terrace Pevensey Bay East Sussex BN24 6EE, 0323 768456 **Meadow** Hebrews Meadow, Lower EVingar Road Whitchurch Hants RG28 7BY 025682 2008 **Mirrorsoft** Mirror Group Holborn Circus London EC1P 1DQ, 01 353 0246 **OEP** Walton Street Oxford, OX2 6DP 0865 56767 **Pool-Tron** 15 Central Precinct Llanelli, Dyfed SA15 1YF, 0554 759624 **Richard Shepard** Elm House, 23-25 Elmshott Lane Cippenham Slough Berkshire 06286 63531 **Scorpio** 307-313 Corn Exchange Building Cathedral Street Manchester 4 061 834 22 **Telung** Stafford Park 10 Telford, Shropshire TF3 3AB 0952 613111 **Tomorrow's Brm** Richmond House, 18 Sydenham Road Bristol BS6 5SH 0272 47860 **US Gold** US Gold, Unit 10 The Parkway Ind Centre, Heneage Street Birmingham B7 4LY **Zircon,** 2 Wendling Rd, Sutton Surrey, 641 7102



"Got Them RS 232 Blues"

Got me some hardware
Make your blue eyes sore
Cost me a hundred headaches
I got a need for more

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

Thought I'd write a program
Thought I'd print it out
Printer threw a wobbler
Hand-writing is a chore

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

My publisher is funny
Asks for the processed word
So I've got this little cable
Bit I leave it in the draw

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

The problem is the standard
Which everyone ignores
So I keep my soldering iron nice and hot
and I'm always working on that chord

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

Did I say I have a modem
I write on the bulletin boards
Or I did until BT
Said it was against the law

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

And all that work for nothing
Sorting out the blasted cable

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

I've got about a ton
Assorted books and mags
I still can't get that cable
To work with the help of them all

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

Just when I think I've sussed it
Got the pins all figured out
I pull the plug with the power on
Just a moment's thoughtless action
And the hardware's had it

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

I wouldn't really mind it
If the manuals weren't so awful
At least then I'd have a chance of
Making sense of what I see

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

The software's just as bad you know
It's written to confuse
Those bugs are left to irritate
Of this I am sure

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

But that's enough of idle chat
I've got problems to sort out
And then I've got some tests to run
And it's nearly dawn

Don't talk to me now
I got them RS 232 blues
Got them RS 232 Blues

Perhaps if I wasn't hooked so bad
I wouldn't get so unhappy
but then, perhaps
I could try

John R Cochrane

Common logs

Puzzle No 147

Eric was looking through a table of natural logarithms the other day when he noticed that the log of 178 actually contained those digits at the third, fourth and fifth decimal places. natural log 178 = 5.18178355

After a lengthy search he found that this was the only three-digit number whose natural log 'contained itself' at the third to the fifth places of decimals.

Now Eric is about to start exactly the same search for three-digit numbers, but this time using *common* logs. As before he is only interested in the third to fifth decimal places.

Can you save him from much hard work by finding the possible answers (if any)?

Solution to Puzzle No 147

The initial number is 329548761, ending with the palindromic number 18181.

By taking the order of operations in *reverse* order, beginning with the palindrome and ending with a nine-digit square, the program checks to determine if this square consists of the nine different digits, one to nine. The palindrome is generated in lines 10 to 50 of the program, and can only be in the range 11211 to 31413.

```
10 FOR A=1 TO 3
20 FOR B=0 TO 9
30 FOR C=0 TO 9
40 LET N=A*10000+B*1000+C*100+B*10+A
50 IF N<11211 OR N>31413 THEN GOTO 150
60 LET S=N*N
70 LET S=S-1000000
80 LET S$=STR$(S):LET S$=RIGHT$(S$,9)
90 LET D=0:LET T=1
100 FOR F=1 TO 9
110 Z=VAL(MID$(S$,F,1))
120 D=D+Z:T=T*Z
130 NEXT F
140 IF D=45 AND T=362880 THEN PRINT N,S
150 NEXT C,B,A
```

To test for duplication of digits is done by evaluating the sum and product of the nine digits, a correct answer having a sum of 45 and a product of 362880. This is an adequate screening technique for most purposes and, as here, produces the only correct solution.

Winner of Puzzle 147

The winner is P M Osborn of Moor Grange View, Leeds, South Yorkshire, who receives £10.

Rules

The closing date for Puzzle No 152 is April 17.

The Hackers

Firstly, ladies and gentlemen, I regret to have to announce
that our guest speaker, Sir Clive Sinclair won't now be able to be with us...
Due to an unfortunate road accident!

Meet the Gang!



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